



Liquid Crystal Display Television Service Manual

Chassis: MT5331

**Product Type: DLT-26H1
DLT-32H1**

Ver 1.0

Otc. 2007



Contents

Contents	- 2 -
Service Manual	- 3 -
1. Precautions and notices.....	- 3 -
1.1 WARNING	- 4 -
1.2 NOTES	- 7 -
2. Product Function Specifications	- 10 -
2.1 Product Function.....	- 10 -
2.2 Specifications.....	- 13 -
3. LCD Panel	- 15 -
3.1 DLT-26H1	- 15 -
3.2 DLT-32H1	- 18 -
4. Chassis Layout and Overall Wiring Diagrams	- 20 -
4.1 Chassis Layout.....	- 20 -
4.2 Overall Wiring Diagrams.....	- 22 -
4.3 Photos of Boards.....	- 24 -
5. Factory/Service OSD Menu.....	- 27 -
5.1 To enter the Factory OSD Menu	- 27 -
5.2 Factory OSD Menu	- 27 -
6. Software Upgrading.....	- 31 -
6.1 Get ready for upgrading.....	- 31 -
6.2 Upgrading with the MtkTool	- 33 -
7. Troubleshooting	- 37 -
7.1 Troubleshooting for Remote Control	- 37 -
7.2 Troubleshooting for Function Key.....	- 38 -
7.3 TV won't Power On.....	- 39 -
7.4 Troubleshooting for Audio.....	- 40 -
7.5 Troubleshooting for TV/VGA/HDMI input.....	- 41 -
7.6 Troubleshooting for YPbPr input.....	- 42 -
7.7 Troubleshooting for Video/S-Video/SCART input	- 43 -
7.8 Other problems	- 44 -
8. Explode View.....	- 45 -
9. Schematic circuit diagram	- 46 -

Service Manual

1. Precautions and notices

BEFORE SERVICING THE LCD TV, READ THE SAFETY PRECAUTIONS IN THIS MANUAL.

WHEN REPLACEMENT PARTS ARE REQUIRED, BE SURE TO USE REPLACEMENT PARTS SPECIFIED BY THE MANUFACTURER.

Proper service and repair is important to the safe, reliable operation of manufacture's Equipment. The service procedures recommended by The manufacture and described in this Service Guide are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. The manufacture could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, The manufacture has not undertaken any such broad evaluation. Accordingly, a

serviceman that uses a service procedure or tools, which are not recommended by the manufacture, must first satisfy himself thoroughly that neither his safety nor the safe of the equipment will be jeopardized by the service method selected.

1.1 WARNING

1.1.1

Critical components having special safety characteristics are identified with a **▲** by the Ref. No. in the parts list. Use of substitute replacement parts, which do not have the same specified safety characteristics, may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from the manufacture. The manufacture assumes no liability, express or implied, arising out of any unauthorized modification of design.

Serviceman assumes all liability.

DANGERCAUTION CAUTION

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE GUIDE.

1.1.2.

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing,

make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.

1. Never replace modules or other components while the unit is switched on.

2. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.

1.1.3

To prevent electrical shock, do not use this polarized ac plug with an extension cord, receptacle, or the outlet unless the blades can be fully inserted to prevent blade exposure.

To prevent electrical shock, match wide blade or plug to wide slot, fully insert.

1.1.4

When replacement parts are required, be sure to use replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

1.1.5

Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points.

- Note: The wire trees should be routed correctly and fixed with the mounted cable clamps.

- The insulation of the mains lead should be checked for external damage.

1.1.6

- (1) Do not touch Signal and Power Connector while this product operates. Do not touch EMI ground part and Heat Sink of Film Filter.
- (2) Do not supply a voltage higher than that specified to this product. This may damage the product and may cause a fire.
- (3) Do not use this product in locations where the humidity is extremely high, where it may be splashed with water, or where flammable materials surround it. Do not install or use the product in a location that does not satisfy the specified environmental conditions. This may damage the product and may cause a fire.
- (4) If a foreign substance (such as water, metal, or liquid) gets inside the panel module, immediately turn off the power. Continuing to use the product may cause fire or electric shock.
- (5) If the product emits smoke, and abnormal smell, or makes an abnormal sound, immediately turn off the power. Continuing to use the product, it may cause fire or electric shock.
- (6) Do not disconnect or connect the connector while power to the product is on. It takes some time for the voltage to drop to a sufficiently low level after the power has been turned off. Confirm that the voltage has dropped to a safe level before disconnecting or connecting the connector.
- (7) Do not pull out or insert the power cable from/to an outlet with wet hands. It may cause electric shock.
- (8) Do not damage or modify the power cable. It may cause fire or electric shock.

(9) If the power cable is damaged, or if the connector is loose, do not use the product: otherwise, this can lead to fire or electric shock.

(10) If the power connector or the connector of the power cable becomes dirty or dusty, wipe it with a dry cloth. Otherwise, this can lead to fire.

(11) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

1.2 NOTES

Notes on Safe Handling of the LCD panel and during service

The work procedures shown with the Note indication are important for ensuring the safety of the product and the servicing work. Be sure to follow these instructions.

- Before starting the work, secure a sufficient working space.
- At all times other than when adjusting and checking the product, be sure to turn OFF the POWER Button and disconnect the power cable from the power source of the TV during servicing.
- To prevent electric shock and breakage of PC board, start the servicing work at least 30 seconds after the main power has been turned off. Especially when installing and removing the power board, start servicing at least 2 minutes after the main power has been turned off.
- While the main power is on, do not touch any parts or circuits other than the ones specified. If any connection other than the one specified is made between the

measuring equipment and the high voltage power supply block, it can result in electric shock or activation of the leakage-detection circuit breaker.

- When installing the LCD module in, and removing it from the packing carton, be sure to have at least two persons perform the work.
- When the surface of the panel comes into contact with the cushioning materials, be sure to confirm that there is no foreign matter on top of the cushioning materials before the surface of the panel comes into contact with the cushioning materials. Failure to observe this precaution may result in, the surface of the panel being scratched by foreign matter.
- When handling the circuit board, be sure to remove static electricity from your body before handling the circuit board.
- Be sure to handle the circuit board by holding the large parts as the heat sink or transformer. Failure to observe this precaution may result in the occurrence of an abnormality in the soldered areas.
- Do not stack the circuit boards. Failure to observe this precaution may result in problems resulting from scratches on the parts, the deformation of parts, and short-circuits due to residual electric charge.
- Routing of the wires and fixing them in position must be done in accordance with the original routing and fixing configuration when servicing is completed. All the wires are routed far away from the areas that become hot (such as the heat sink). These wires are fixed in position with the wire clamps so that the wires do not move,

thereby ensuring that they are not damaged and their materials do not deteriorate over long periods of time. Therefore, route the cables and fix the cables to the original position and states using the wire clamps.

- Perform a safety check when servicing is completed. Verify that the peripherals of the serviced points have not undergone any deterioration during servicing. Also verify that the screws, parts and cables removed for servicing purposes have all been returned to their proper locations in accordance with the original setup.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated dangerous voltage within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



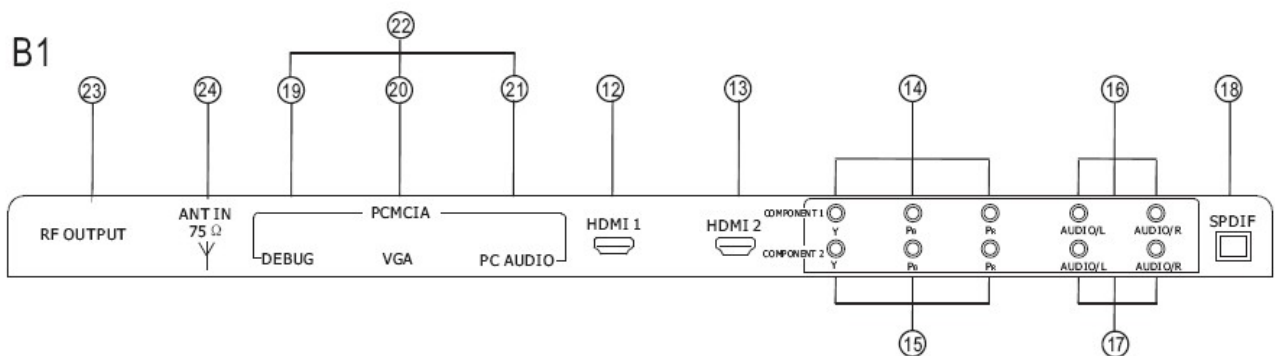
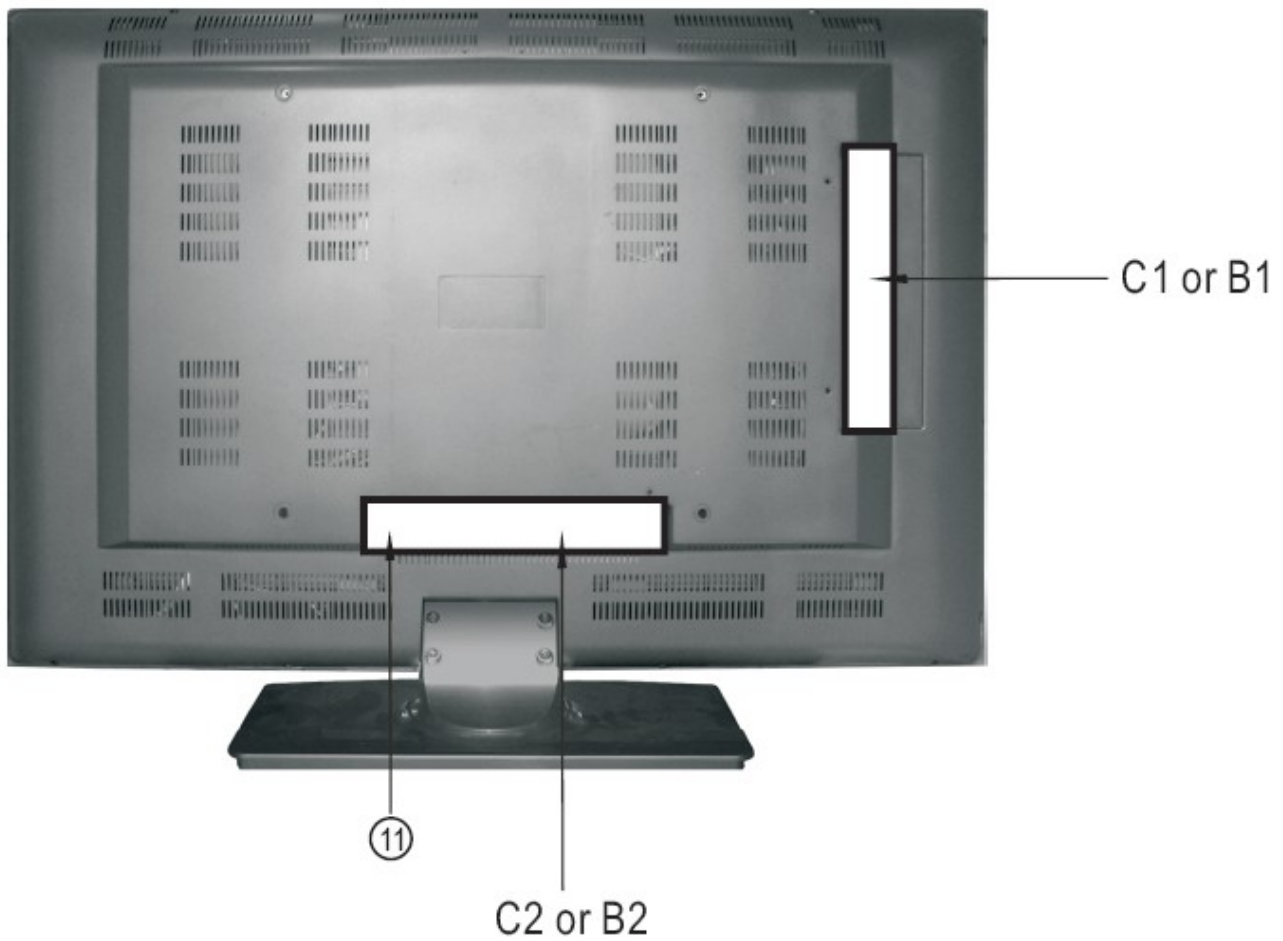
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the set.

2. Product Function Specifications

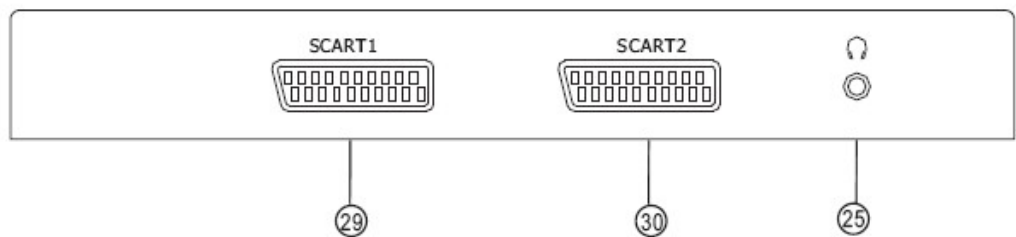
2.1 Product Function



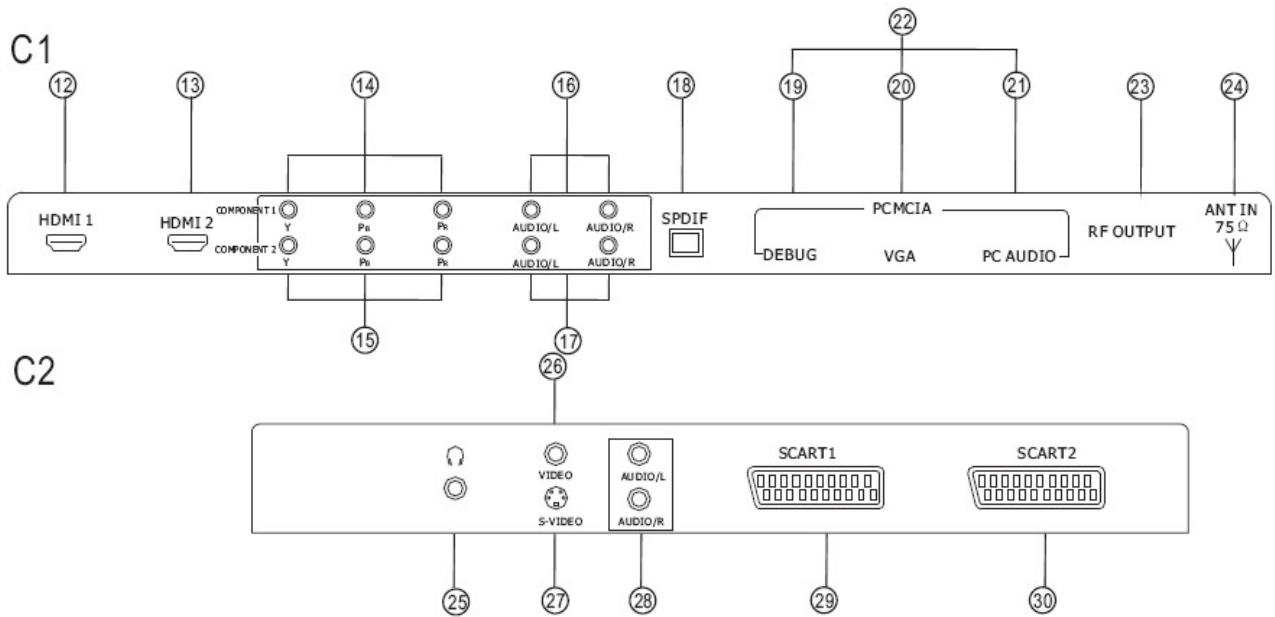
LCD TV Service Manual



B2



LCD TV Service Manual



- | | | |
|------------------------------|--------------------------------|----------------------------------|
| ① Power switch(on/off) | ⑪ AC power socket | ⑲ PC audio |
| ② Remote sensing window | ⑫ HDMI1 input | ⑳ PCMCIA socket |
| ③ Power indicator | ⑬ HDMI2 input | ㉑ RF output |
| ④ Menu button | ⑭ YPbPr input 1 | ㉒ RF input |
| ⑤ Source select | ⑮ YPbPr input 2 | ㉓ Headphone output |
| ⑥ Volume up / cursor right | ⑯ Audio in1(for YPbPr1) | ㉔ Video input |
| ⑦ Volume down / cursor left | ⑰ Audio in2(for YPbPr2) | ㉕ S-Video input |
| ⑧ Channel up / cursor up | ⑱ SPDIF output | ㉖ Audio in(for Video or S-Video) |
| ⑨ Channel down / cursor down | ㉑ Debug(for software updating) | ㉗ SCART1 connector |
| ⑩ Power button (standby) | ㉒ VGA input | ㉘ SCART2 connector |

Note:

- 1.The above figures are for reference only, please refer to the actual units to determine their appearance.
- 2.Terminal of DLT-26H1 is constitutive of B1and B2,Terminal of DLT-32H1 is constitutive of C1 and C2,

2.2 Specifications

Native Resolution:	1366×768 Pixels (corresponding to WXGA)
Color System:	PAL/SECAM
Sound System:	B/G, D/K, I, L/L'
Tuner:	VHF/UHF:48.25~863.25MHz
Antenna:	75ΩVHF/UHF input
Stereo:	NICAM/A2

VIDEO INPUT:

SCART-1 (Video and RGB)	Video: 1 Vp-p, negative sync, 75Ω input RGB: 0.7 Vp-p, 75Ω input
SCART-2 (Video)	Video: 1 Vp-p, negative sync, 75Ω input
Audio in	Stereo audio input for SCART1 and SCART2
COMPONENT	RCA, 0.7 Vp-p/75Ω inputs (480I/60Hz, 480P/60Hz, 576I/50Hz, 576P/50Hz 720P/60Hz, 1080I/50,1080I/60Hz)
Audio in	RCA Stereo audio input

PC INPUT:

VGA	15 Pin, Analog RGB signal, 0.7Vp-p, 75Ω input (VGA, SVGA, XGA)
Audio in	Mini-jack (3.5Φ) ×1

MONITOR OUT

Audio/Video Output	SCART1: CANAL+
Power Requirement	AC 160 to 240V, 50/60Hz

	DLT-26H1	DLT-32H1
Screen Size	66 cm	81cm
Speaker Output	4W+4W	6W+6W
Power Consumption	140W	150W
Dimensions(mm) L/D/H (comprise pedestal)	670/208 /516	800/ 240 /598
Gross Weight (comprise pedestal)	14kg	19kg

LCD TV Service Manual

Allowable temperature of operation environment 0°C to 40°C

ACCESSORIES

Operating Instructions	1
Remote Control Unit	1
Power Lead	1
Dry Cell Battery	2

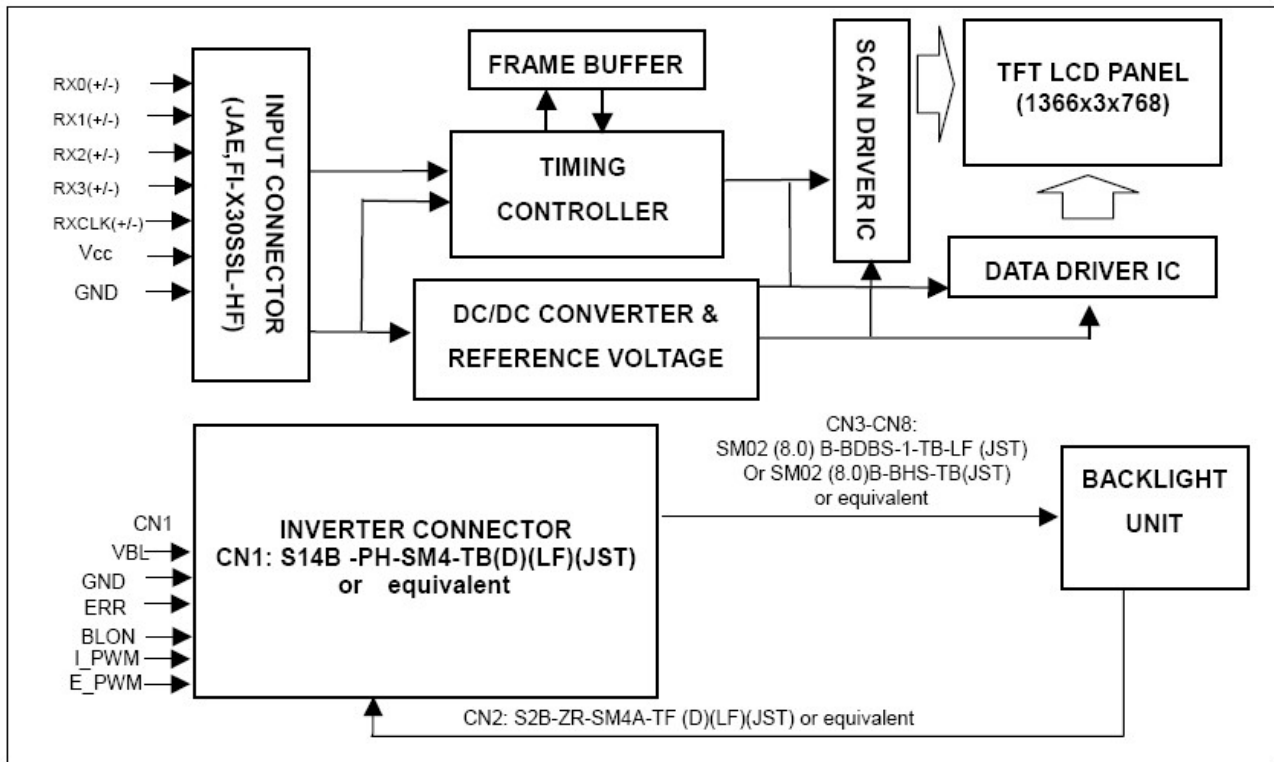
NOTE: Specifications and design are subject to possible modifications without notice due to improvements.

3. LCD Panel

3.1 DLT-26H1

V260B1- L01/L03 is a TFT Liquid Crystal Display module with 12-CCFL Backlight unit and 1ch-LVDS interface. The display diagonal is 26". This module supports 1366 x 768 WXGA format and can display 16.2M colors (6-bits+FRC colors). The inverter module for backlight is built-in.

BLOCK DIAGRAM



GENERAL SPECIFICATIONS

Item	Specification	Unit	Note
Active Area	575.769 (H) x 323.712 (V) (26" diagonal)	mm	(1)
Bezel Opening Area	580.8 (H) x 328.8 (V)	mm	
Driver Element	a-si TFT active matrix	-	
Pixel Number	1366 x R.G.B. x 768	pixel	
Pixel Pitch (Sub Pixel)	0.1405 (H) x 0.4215 (V)	mm	
Pixel Arrangement	RGB vertical stripe	-	
Display Colors	16.2M	color	
Display Operation Mode	Transmissive mode / Normally White	-	
Surface Treatment	Anti-Glare coating (Haze 25%) Hard coating (3H)	-	

LCD TV Service Manual

V260B1-L01 (PN: 1039693) CHI MEI

CNF1 Connector Pin Assignment

Pin No.	Symbol	Description	Note
1	NC	No Connection	(3)
2	NC	No Connection	(3)
3	NC	No Connection	(3)
4	GND	Ground	
5	RX0-	Negative transmission data of pixel 0	
6	RX0+	Positive transmission data of pixel 0	
7	GND	Ground	
8	RX1-	Negative transmission data of pixel 1	
9	RX1+	Positive transmission data of pixel 1	
10	GND	Ground	
11	RX2-	Negative transmission data of pixel 2	
12	RX2+	Positive transmission data of pixel 2	
13	GND	Ground	
14	RXCLK-	Negative of clock	
15	RXCLK+	Positive of clock	
16	GND	Ground	
17	RX3-	Negative transmission data of pixel 3	
18	RX3+	Positive transmission data of pixel 3	
19	GND	Ground	
20	NC	No Connection	
21	SELLVDS	Select LVDS data format	(2)
22	NC	No Connection	(3)
23	GND	Ground	
24	GND	Ground	
25	GND	Ground	
26	VCC	Power supply: +5V	
27	VCC	Power supply: +5V	
28	VCC	Power supply: +5V	
29	VCC	Power supply: +5V	
30	VCC	Power supply: +5V	

Note (1) Connector Part No.: JAE,FI-X30SSL-HF or compatible

Note (2) high: Normal, Ground or OPEN: JEIDA LVDS format

Note (3) Reserved for internal use. Please leave it open.

LCD TV Service Manual

V260B1-L03 (PN: 1047168) CHI MEI

CNF1 Connector Pin Assignment

Pin No.	Symbol	Description	Note
1	VCC	Power supply: +12V	
2	VCC	Power supply: +12V	
3	VCC	Power supply: +12V	
4	VCC	Power supply: +12V	
5	GND	Ground	
6	GND	Ground	
7	GND	Ground	
8	GND	Ground	
9	SELLVDS	Select LVDS data format	(1),(4)
10	NC	No connection	(3)
11	GND	Ground	
12	RX0-	Negative transmission data of pixel 0	
13	RX0+	Positive transmission data of pixel 0	
14	GND	Ground	
15	RX1-	Negative transmission data of pixel 1	
16	RX1+	Positive transmission data of pixel 1	
17	GND	Ground	
18	RX2-	Negative transmission data of pixel 2	
19	RX2+	Positive transmission data of pixel 2	
20	GND	Ground	
21	RXCLK-	Negative of clock	
22	RXCLK+	Positive of clock	
23	GND	Ground	
24	RX3-	Negative transmission data of pixel 3	
25	RX3+	Positive transmission data of pixel 3	
26	GND	Ground	
27	NC	No connection	(3)
28	NC	No connection	(3)
29	GND	Ground	
30	GND	Ground	

Note (1) 5.5 LVDS INTERFACE

Note (2) Connector Part No.: JAE, FI-X30SSL-HF or Compatible

Note (3) Reserve for internal use. Must be opened, if GND/High will cause abnormal display.

(But it will not cause panel damage)

Pin10: Reserve pin (no function)

Pin27: Aging mode function (H: enable, L: disable)

Pin28: Flicker adjustment (H: enable, L: disable)

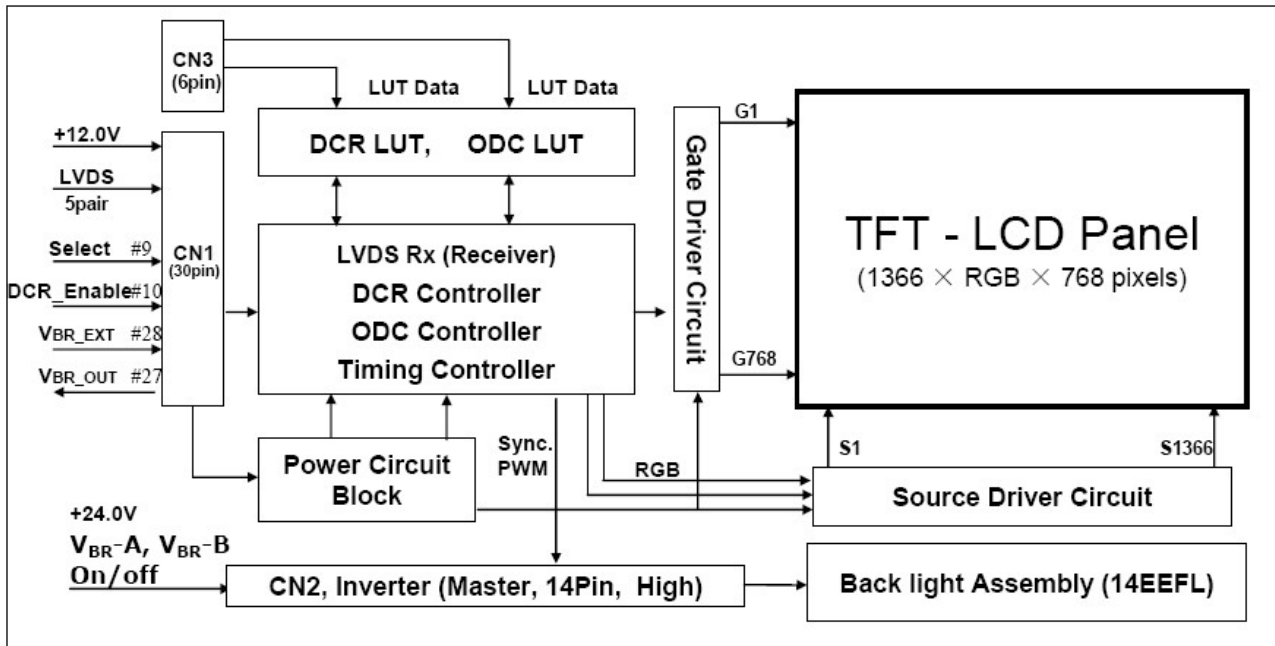
Note (4) The impedance of option pin is 50K ohm.

3.2 DLT-32H1

LC320WX3-SLC1 (PN: 1044669) LG. Philips

The LC320WX3 is a Color Active Matrix Liquid Crystal Display with an integral External Electrode recent Lamp (EEFL) backlight system. The matrix employs a-Si Thin Film Transistor as the active element. It is a transmissive type display operating in the normally black mode. It has a 31.51 inch diagonally measured active display area with WXGA resolution (768 vertical by 1366 horizontal pixel array). Each pixel is divided into Red, Green and Blue sub-pixels or dots which are arranged in vertical stripes. Gray scale or the luminance of the sub-pixel color is determined with a 8-bit gray scale signal for each dot, thus presenting a palette of more than 16.7M (true) colors. It has been designed to apply the 8-bit 1-port LVDS interface.

BLOCK DIAGRAM



GENERAL SPECIFICATIONS

LCD TV Service Manual

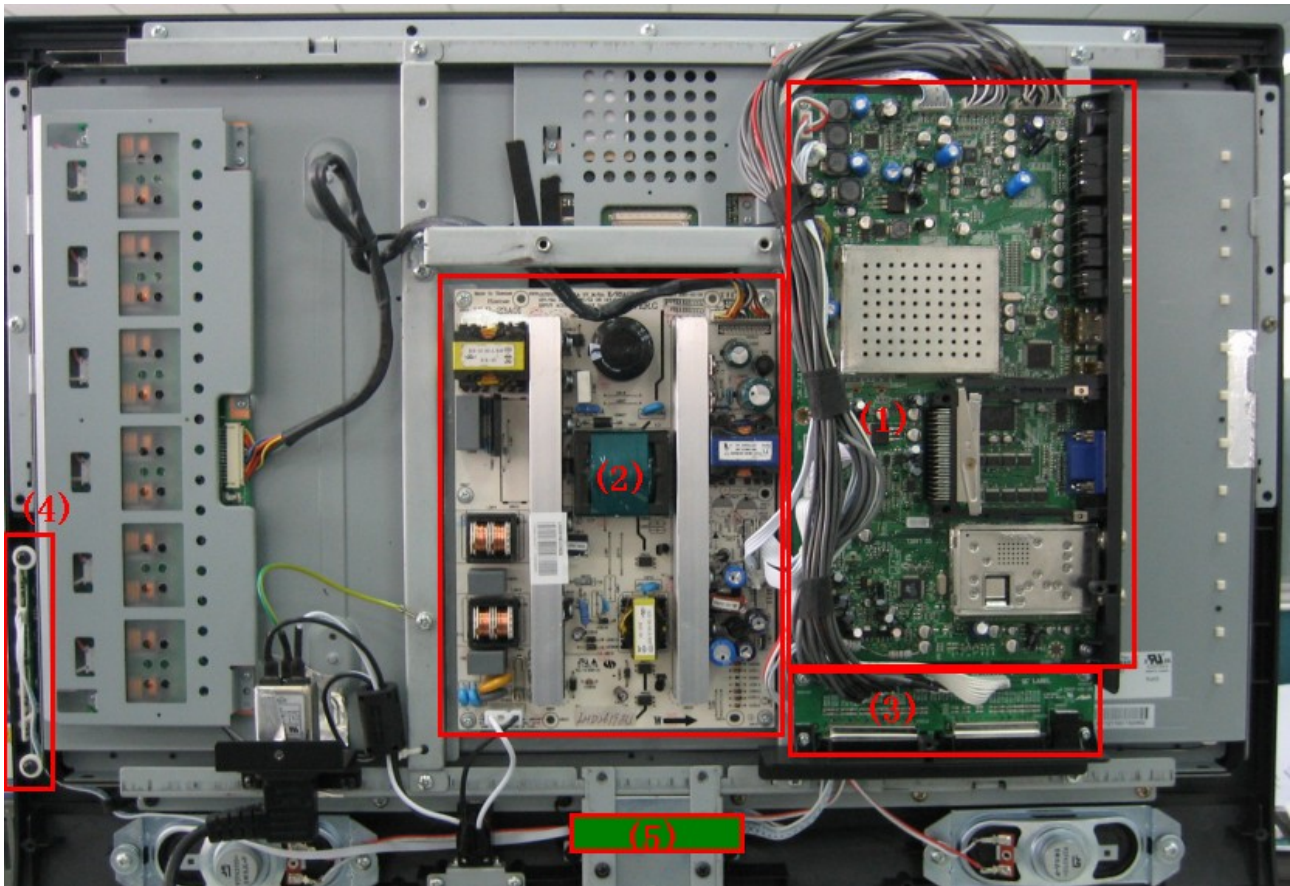
Active Screen Size	31.51 inches(800.4mm) diagonal
Outline Dimension	760.0 mm(H) x 450.0 mm(V) x 48.0 mm(D) (Typ.)
Pixel Pitch	170.25 μ m x 510.75 μ m x RGB
Pixel Format	1366 horiz. by 768 vert. pixels RGB stripe arrangement
Color Depth	8bit, 16,7 M colors
Luminance, White	400 cd/m ² (Center 1 point) (Typ.)
Viewing Angle (CR>10)	Viewing angle free (R/L 178(Typ.), U/D 178(Typ.))
Power Consumption	Total 87.72Watt (Typ.) (Logic= 3.72W, Lamp=84W [I _{BL} =84mA])
Weight	6150 g (Typ.)
Display Operating Mode	Transmissive mode, normally black
Surface Treatment	Hard coating(3H), anti-glare treatment of the front polarizer

Active Screen Size	37.02 inches(940.3mm) diagonal
Outline Dimension	877.0mm(H) x 516.8mm(V) x 55.5mm(D) (Typ.)
Pixel Pitch	0.200mm x 0.600mm x RGB
Pixel Format	1366 horiz. by 768 vert. pixels RGB stripe arrangement
Color Depth	8-bit, 16.7 M colors
Luminance, White	500 cd/m ² (Center 1 point Typ.)
Viewing Angle (CR>10)	Viewing angle free (R/L 178(Typ.), U/D 178(Typ.))
Power Consumption	Total TBD Watt (Typ.) (Logic= 4.8 W, B/L= TBD W [I _{LAMP} = TBDmA])
Weight	TBD (Typ.)
Display Operating Mode	Transmissive mode, normally black
Surface Treatment	Hard coating(3H), Anti-glare treatment of the front polarizer

4. Chassis Layout and Overall Wiring Diagrams

4.1 Chassis Layout

DLT-26H1

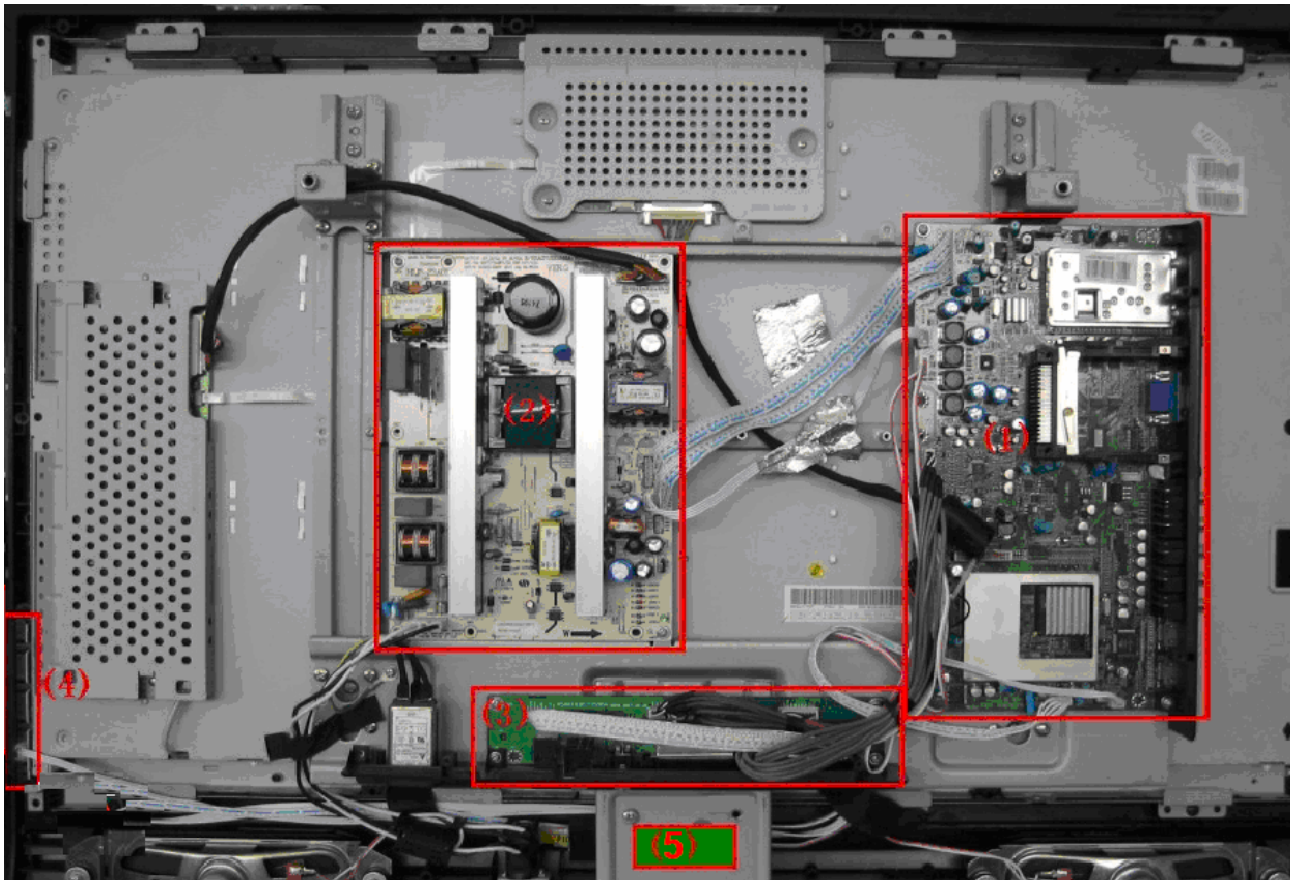


No	Description	Part No	Type/Model	PCB
(1)	Main BD (I)	113436	RSAG2.908.1098\ROH	RSAG7.820.1122\VER.C
	Main BD (II)	114698	RSAG2.908.1098-4\ROH	RSAG7.820.1122\VER.C
(2)	Power BD	112817	RSAG2.908.916-9\ROH	E/RAG7.820.848A\ROH\VER.C
(3)	SCART BD	113698	RSAG2.908.1119\ROH	RSAG7.820.1135\VER.B
(4)	Keypad BD	114174	RSAG2.908.1168\ROH	20RSAG7.820.1214\VER.A
(5)	IR & LED Board	114175	RSAG2.908.1169\ROH	40RSAG7.820.1213\VER.A

113436 RSAG2.908.1098 is for V260B1-L01

114698 RSAG2.908.1098-4\ROH is for V260B1-L01

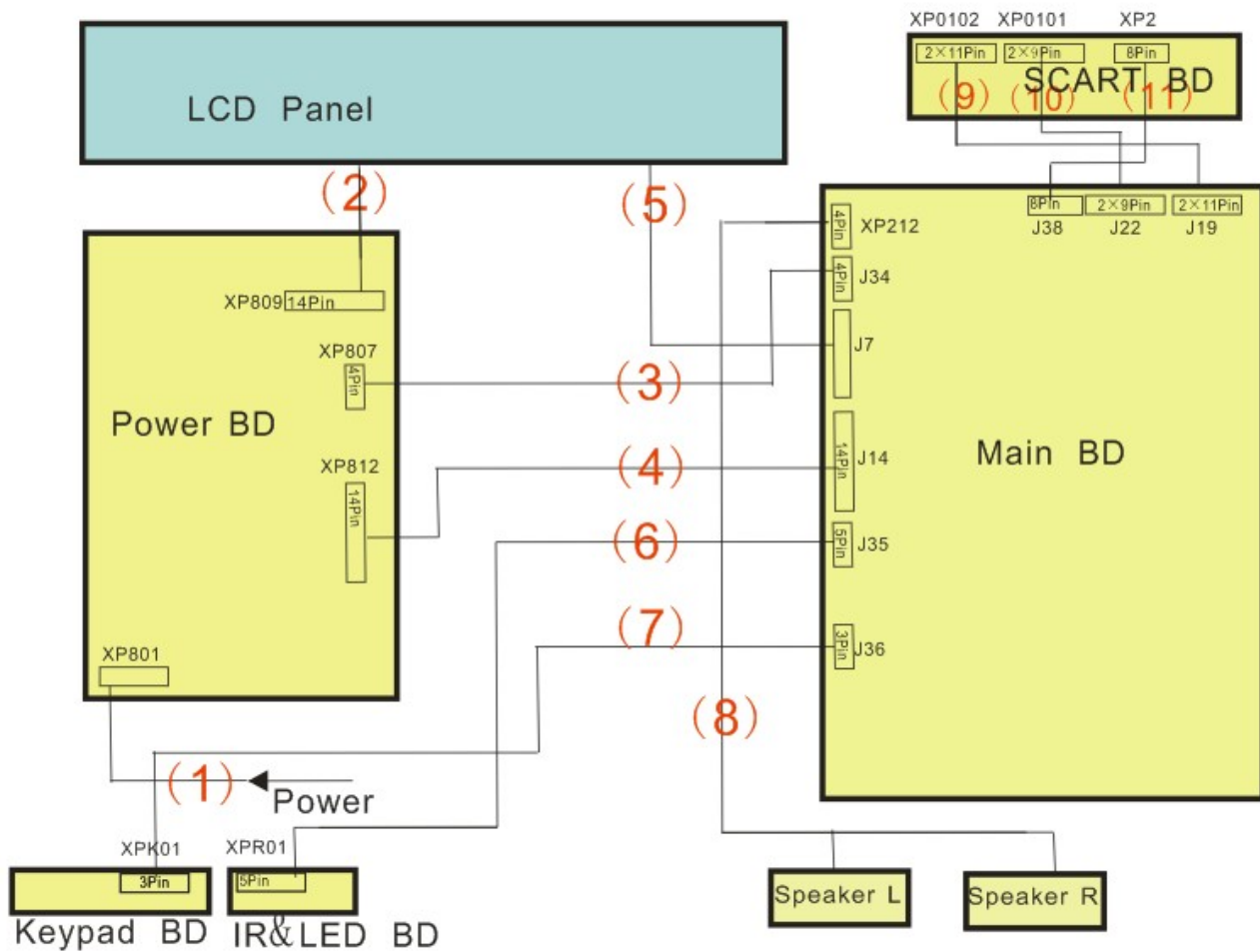
DLT-32H1



No	Description	Part No	Type/Model	PCB
(1)	Main BD	113542	RSAG2.908.1106\ROH	RSAG7.820.1136\VER.A
(2)	Power BD	112817	RSAG2.908.916-9\ROH	E/RAG7.820.848A\ROH\VER.C
(3)	SCART BD	113544	RSAG2.908.1107\ROH	5RSAG7.820.1121\VER.B
(4)	Keypad BD	114174	RSAG2.908.1168	20RSAG7.820.1214\VER.B
(5)	IR & LED Board	114175	RSAG2.908.1169	40RSAG7.820.1213\VER.A

4.2 Overall Wiring Diagrams

DLT-26H1/DLT-32H1



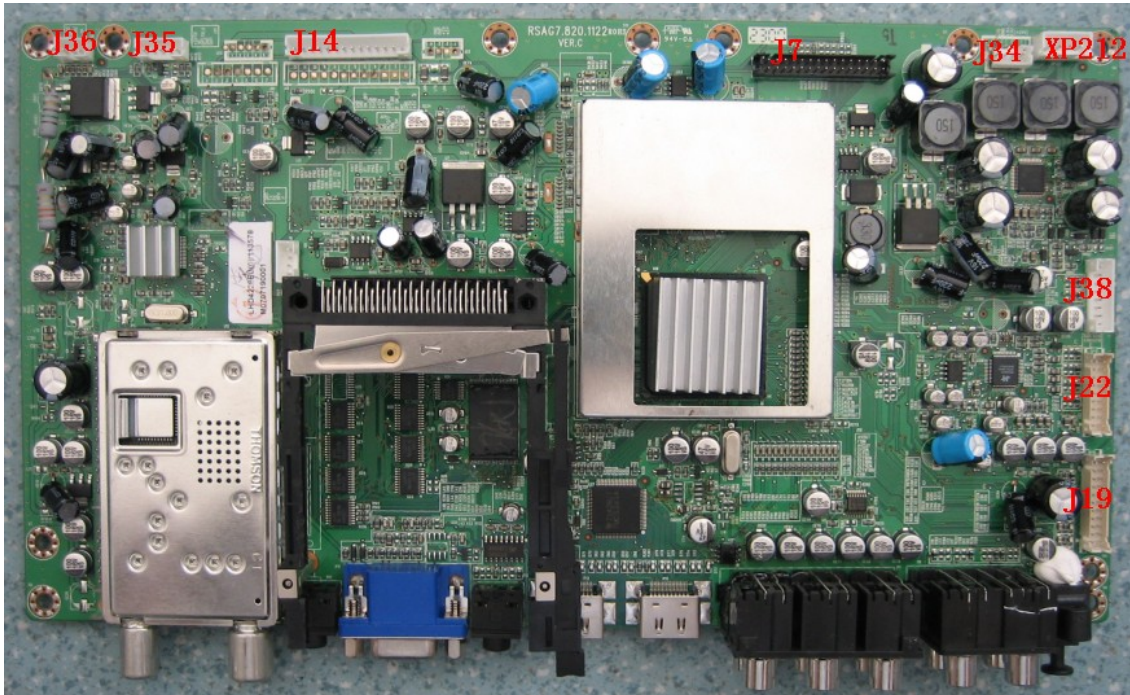
LCD TV Service Manual

No	DESCRIPTION	SPECIFICATION	NOTE
1	Main Power	26" TJC2-3Y-100-2\ROH	Power Inlet-->Power BD XP801
		32" TJC2-3Y-450-2\ROH	
2	Back light power to panel	26" HX-5039\ROH	Power BD XP809<-->Panel
		32" HX-3006B350\ROH	
3	Power supply for amplifier	26" TJC10T-4Y-250\ROH	Power BD XP807<-->Main BD J34
		32" TJC10T-4Y-250\ROH	
4	5V,12V power and communication between Main BD and power BD	26" TJC10T-14Y-150	Power BD XP812<-->Main BD J14
		32" TJC10T-14Y-250	
5	LVDS signal	26" HX2-2X10NLB200-CMO	Main BD J7<-->Panel
		32" HX-0147	
6	LED & IR	26" TJC10T-5Y-300\ROH	Main BD J35<-->IR BD XP113
		32" TJC10T-5Y-350\ROH	
7	Buttons	26" TJC10T-3Y-650\ROH	Main BD J36<--> Key BD XPK03
		32" TJC10T-3Y-900\ROH	
8	Audio out put (R/L)	26" TJC3H-4Y-650-500\ROH	Main BD XP212<-->Speaker L/R
		32" TJC3H-4Y-800-600\ROH	
9	Video input connection (SCART 1)	26" HX2-2x11D 500P-1	Main BD J19<--> SCART BD XP0102
		32" HX2-2x11D 250P-2	
10	Video input connection (SCART 2)	26" HX-2018C500\ROH	Main BD J22<--> SCART BD XP0101
		32" HX-2018C300\ROH	
11	Video input connection (video, s-video) and headphone output	26" TJC10T-8Y-500\ROH	Main BD J38<--> SCART BD XP2
		32" TJC10T-8Y-350\ROH	

4.3 Photos of Boards

(1) Main BD

DLT-26H1



DLT-32H1



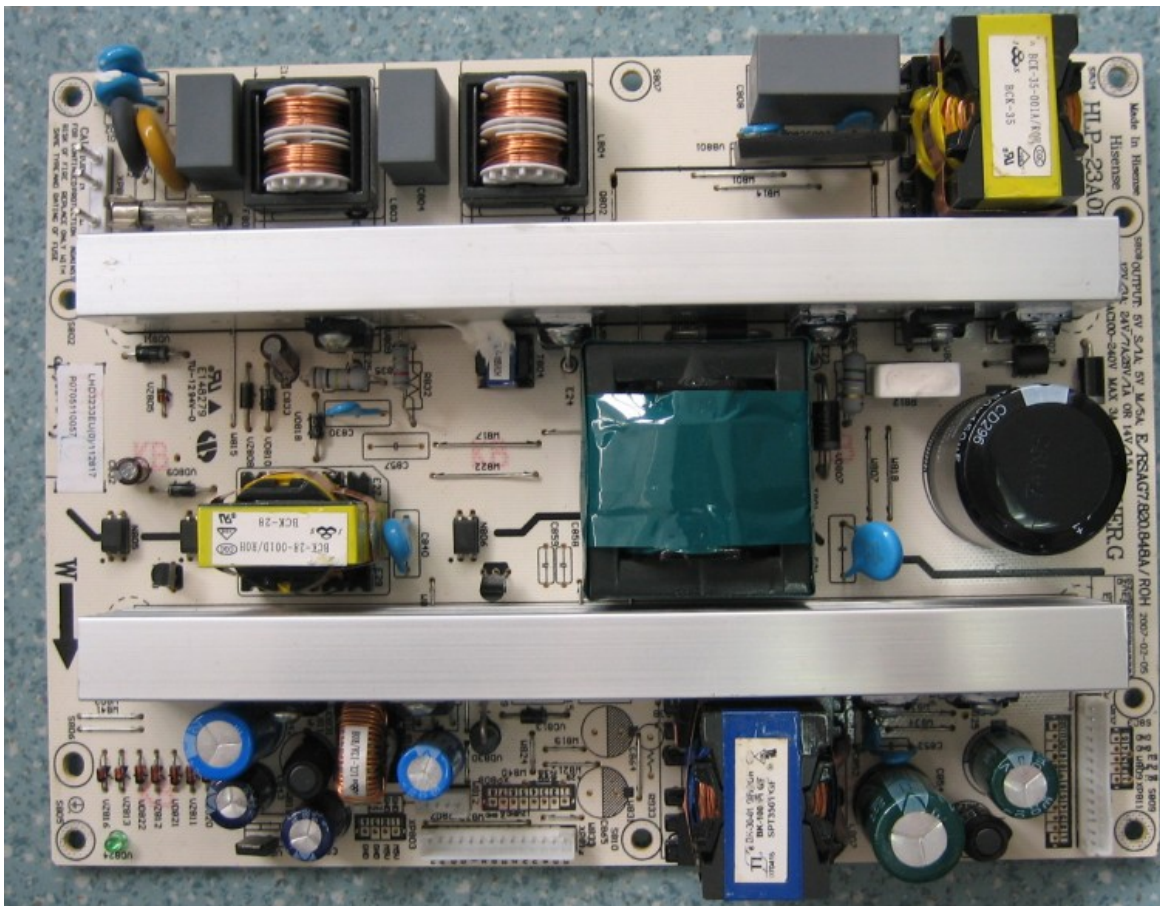
LCD TV Service Manual

DLT-26H1/ DLT-32H1

Location No.	SPECIFICATION	Description
J36	TJC10-3A\ROH	Buttons (connect key BD and main BD)
J35	TJC10-5A\ROH	IR, LED
J14	TJC10-14A\ROH	5V,12V power
J34	TJC10-4A\ROH	Power 14V from power BD
XP212	TJC3-4A\ROH	Audio output
J38	TJC10-8A\ROH	Video, S-video, Headphone out
J22	A2600WSO-2X9P\ROH	SCART 2
J19	A2600WSO-2X11P\ROH	SCART 1
J7	FF-HX19-10\ROH	LVDS

(2) Power BD

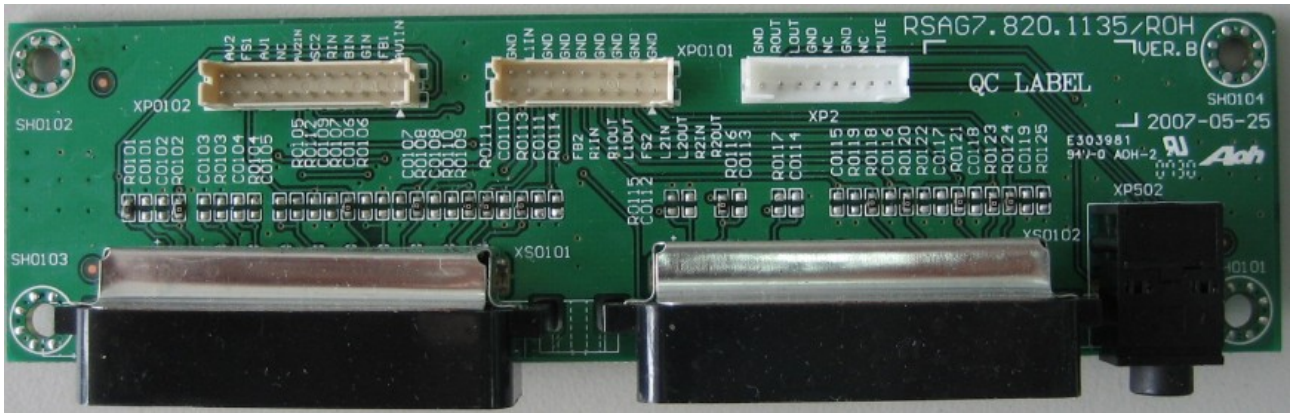
DLT-26H1/ DLT-32H1



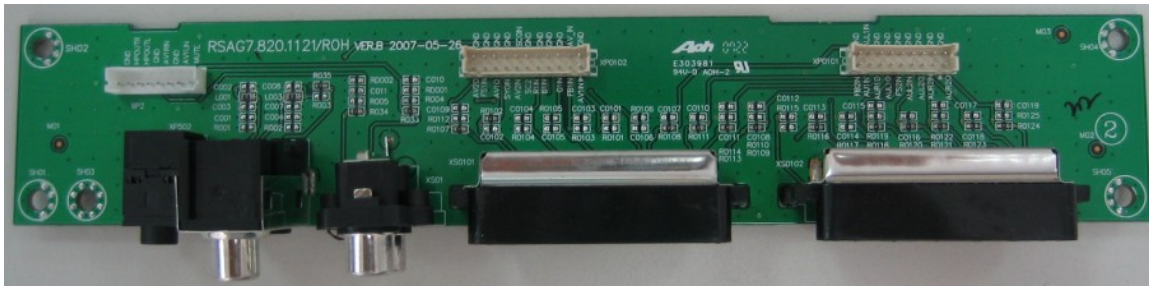
LCD TV Service Manual

(3) SCART BD

DLT-26H1



DLT-32H1



(4) Keypad BD



(5) IR BD



5. Factory/Service OSD Menu

5.1 To enter the Factory OSD Menu

- a. With factory RC (remote control)
 1. Press “M” button and enter factory mode.
 2. Press “Menu” button and enter factory OSD menu.
 3. Press “CH+”/“CH-” button select the function menu, press “VOL+”/“VOL-” enter the selected function menu. Press “VOL+”/“VOL-” button adjust values in the menu.
- b. With user’s RC
 1. Power TV On
 2. Press Menu button and call up User OSD Menu
 3. Select Sound-> Balance
 4. Enter 0->5->3 ->2 in sequence.
Note: If necessary, re-do number keys.
 5. Factory OSD appears.

5.2 Factory OSD Menu

5.2.1 Factory Menu

Item 0	Item 1	Note
White Balance	R Gain	High Brightness Red.
	G Gain	High Brightness Green
	B Gain	High Brightness Blue
	R Offset	Low Brightness Red.
	G Offset	Low Brightness Green
	B Offset	Low Brightness Blue
	WBH Brightness	Adjust high brightness temporarily
	WBH Contrast	Adjust high contrast temporarily
	WBH Color	Adjust high color temporarily
	WBL Brightness	Adjust low brightness temporarily
	WBL Contrast	Adjust low contrast temporarily
	WBL Color	Adjust low color temporarily

Note: Before adjusting, please change to desired source. Different source has different WB values.

LCD TV Service Manual

Set Channel	Zhong Shi	Qingdao Jiangxi Road factory
	Huang Dao	Huangdao Industrial Park
	Gui Yang	Gui Yang Industrial Park
	Liao Ning	Liao Ning Industrial Park
	Hungary	HS Hungary
	Australia	HS Australia
	France	HS France
Auto Color		
Factory Option	To FAC	M-Can enter factory mode with factory RC or user RC. U-Can enter factory mode only with user's RC.
	Logo Option	Logo Selection
	Test Time	1~30 (default 5)
	Communication	ON/OFF (default ON)
MODE "M" is only used for factory production.		
Version Info		
	Version	Software version
	Date	The date of current version
Note: Software version info of the TV, readable only.		
Clean Protected		
Clean All		

Note: The factory menu date varies according to different sources. In case changing the factory data by error, you can choose to "clear the EEPROM", by which you can resume the default value.

To clear the EEPROM:

- Select the button "Clear All".
- Press VOL+ button to clear the EEPROM data.
- When the "Clear All" button becomes white, turn off the power.
- Restart the TV.

LCD TV Service Manual

5.2.1 Design Menu

Item 0	Item 1	Item 2	Note
Color Temp	Color Temp	Cool (default)/Warm	
	R Gain		
	G Gain		
	B Gain		
Video	Video Curve	Brightness Min	Min Brightness
		Brightness Mid	Mid Brightness
		Brightness Max	Max Brightness
		Contrast Min	Min Contrast
		Contrast Mid	Mid Contrast
		Contrast Max	Max Contrast s
		Saturation Min	Min Saturation
		Saturation Mid	Mid Saturation
		Saturation Max	Max Saturation
	Picture Mode	SOURCE	The current program source
		VIVID Brightness	Brightness of VIVID mode
		VIVID Contrast	Contrast of VIVID mode
		VIVID Saturation	Saturation of VIVID mode
		STD Brightness	Brightness of STD mode
		STD Contrast	Contrast of STD mode
		STD Saturation	Saturation of STD mode
		MOVIE Brightness	Brightness of Movie mode
		MOVIE Contrast	Contrast of Movie mode
		MOVIE Saturation	Saturation of Movie mode
Sound	Volume Curve	Volume Min	When value is 1 Think about the Audio out power before adjusting
		Volume 20	When value is 20 Think about the

LCD TV Service Manual

			Audio out power before adjusting
		Volume Mid	When value is 50 Think about the Audio out power before adjusting
		Volume 80	When value is 70 Think about the Audio out power before adjusting
		Volume Max	When value is 90 Think about the Audio out power before adjusting
	Audio Mode	Audio Mode	Standard, Speech, Music
		120HZ	Different frequencies for different Audio Mode
		500HZ	
		1.5kHz	
		5kHz	
		10kHz	

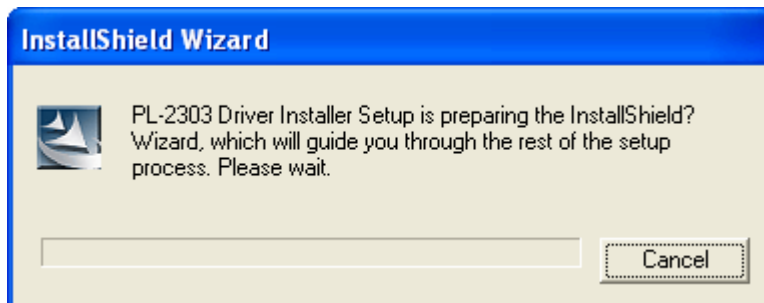
6. Software Upgrading

The software is upgraded by a burning tool-MtkTool, which can burn the program file *.bin to the main board of the unit.

6.1 Get ready for upgrading

6.1.1 Install the driver

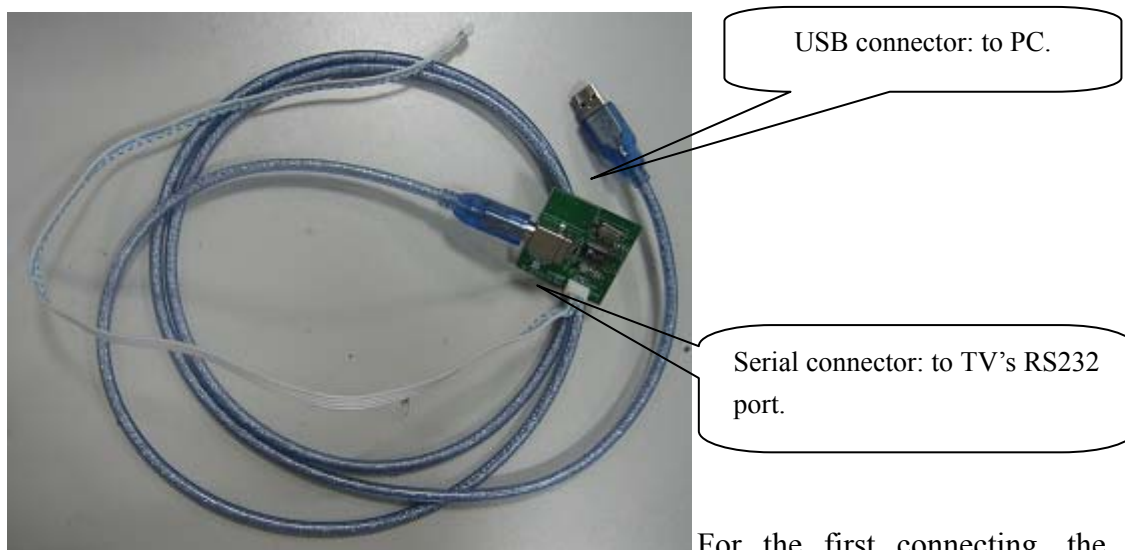
Double click the icon  **PL-2303 Driver Installer.exe**, install the driver.



Select the default value, the driver will be installed step by step.

6.1.2 Hardware connecting

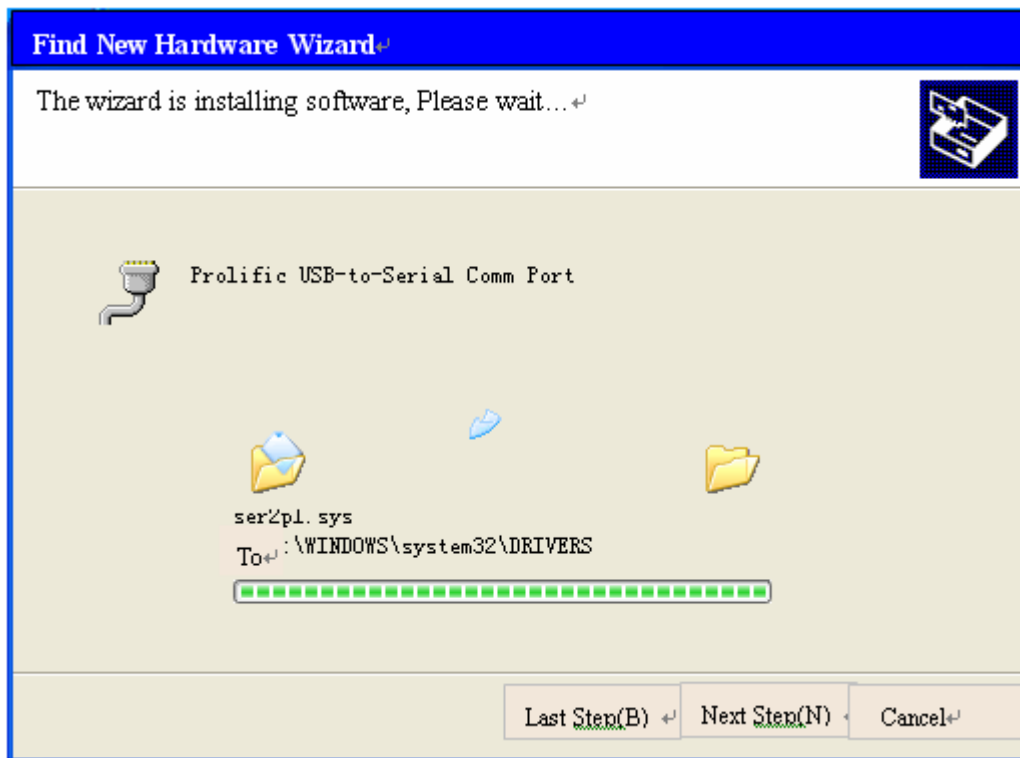
Connect the unit to your pc with a USB-to-serial port cable. USB port connects to your pc, and serial port to the TV's RS232 port.



For the first connecting, the pc will

LCD TV Service Manual

recognize and automatically install the USB device. The process is just like the installation of a mini disk, see the following picture.



6.2 Upgrading with the MtkTool

MTKtool is a green program needing no installation. It is saved in the folder



MTKTOOL_20061027

. There are five folders/files in this folder altogether.



MtkLog



flashinf.ini
配置设置
17 KB



MtkTool.exe



MtkTool.ini
配置设置
1 KB




Shortcut to
MtkTool.exe
快捷方式

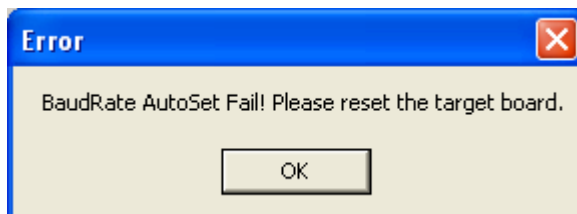
The MtkTool using log is restored in the MtkLog folder. It records the running time and date whenever the tool is used. The log will be a txt file named by the date and time.



MtkTool.exe

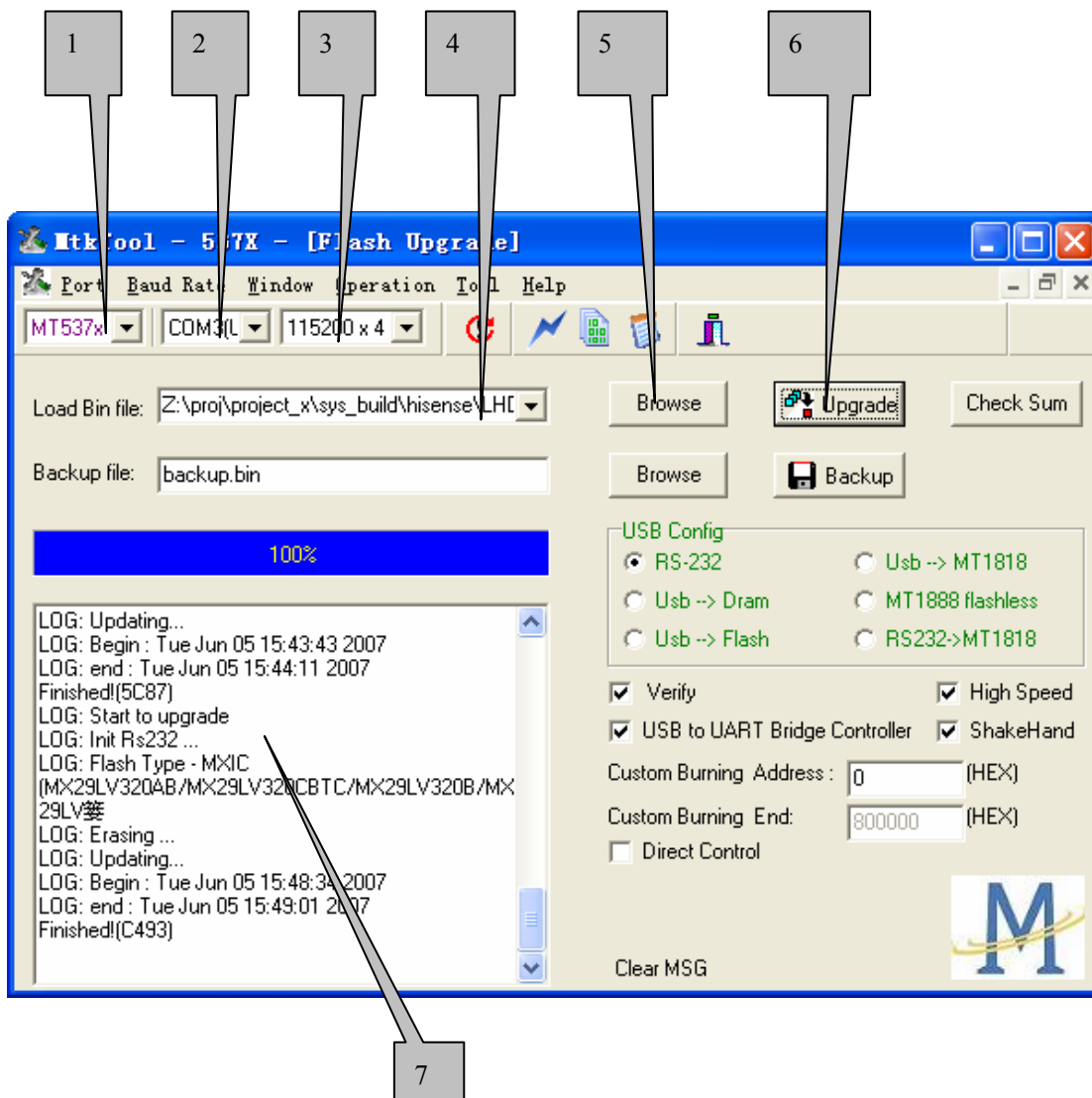
After connecting the TV with your PC, double click  icon, open the MtkTool.

If following error appears, it means the related port is not set properly.



Ignore these errors, click “Confirm” and enter the MtkTool main interface, see the following picture.

LCD TV Service Manual

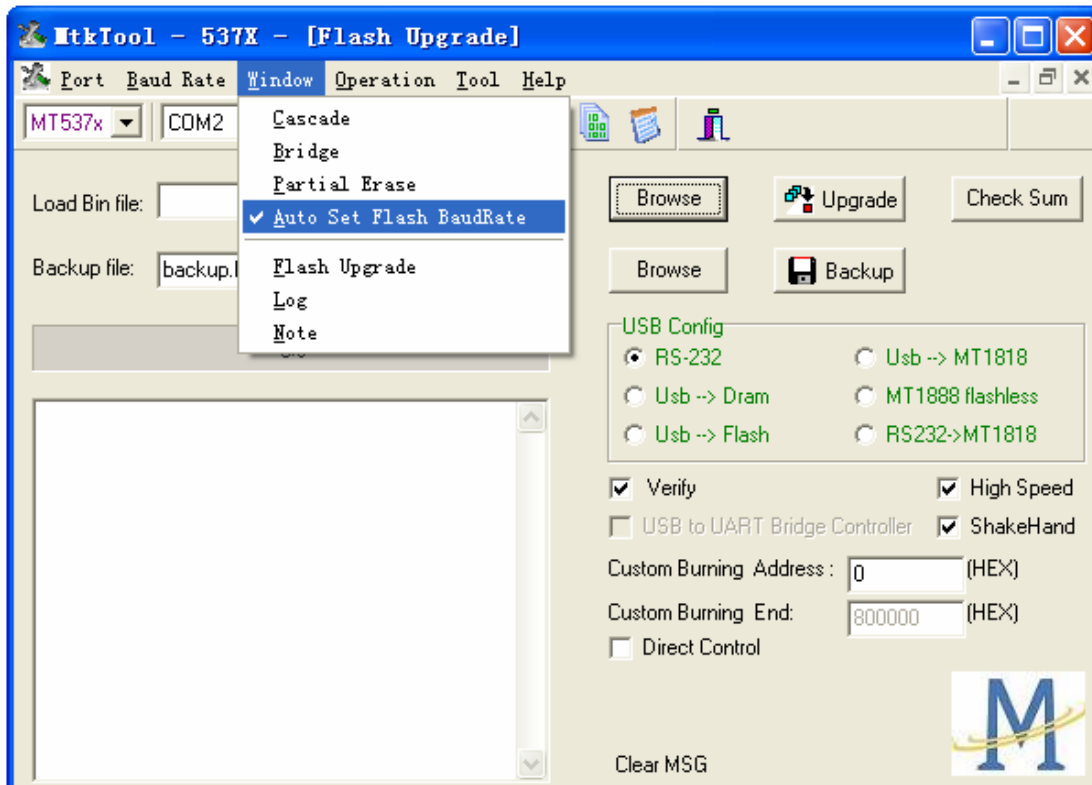
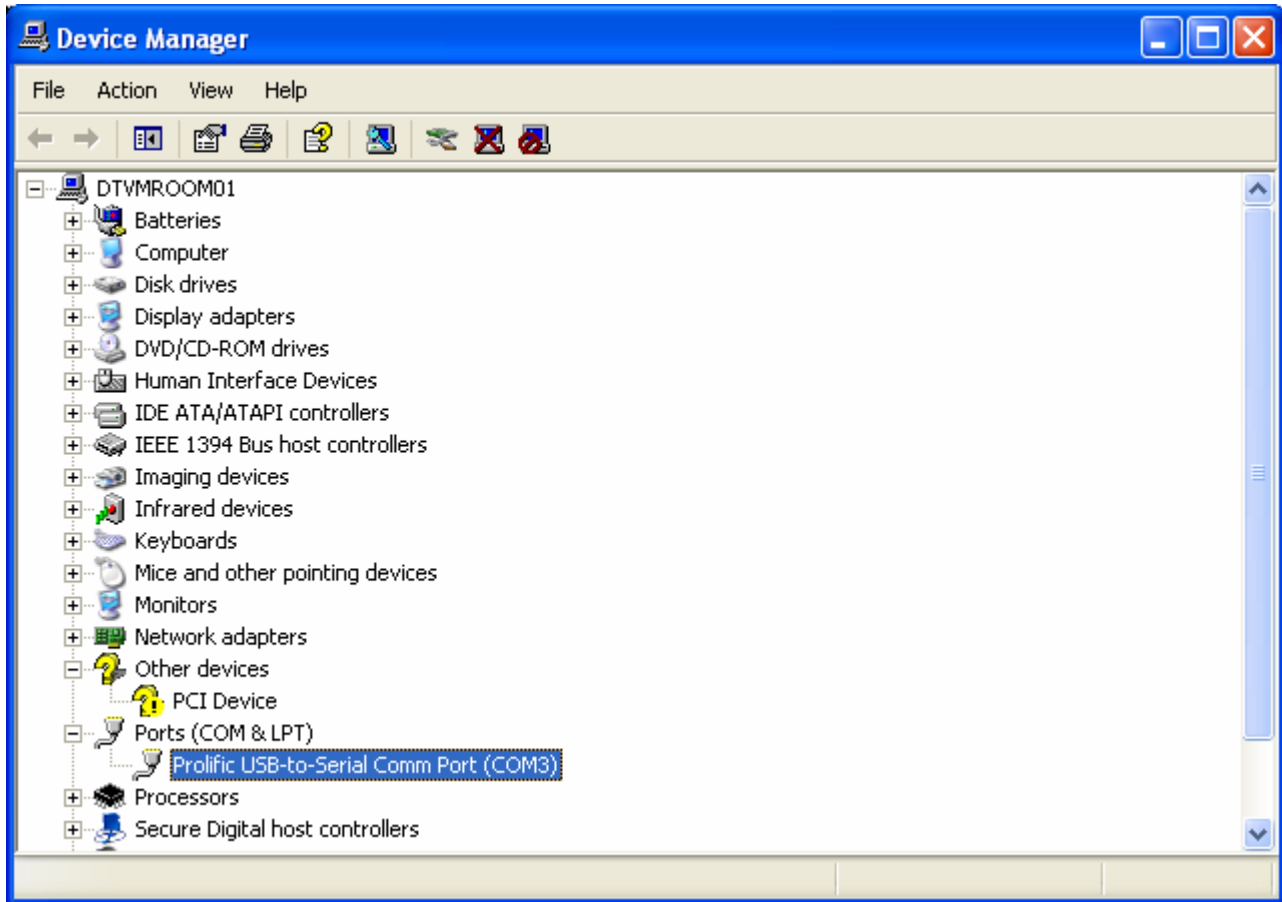


- 1—Flash chip model (for PLX-4202B and PLX-5002B, it will be MT537X).
- 2—The port through which the PC communicate with the chip.
- 3—The communicating baud rate
- 4—The new program file (*.bin) for upgrading.
- 5—Click this button can select the *.bin file to be used for upgrading.
- 6—Click to start upgrading.
- 7—Information displaying window.

Setting the communication port:

Open “Device Manager” and find which port is connected with the TV. In above picture, COM2 is connected to the TV; so, select “COM2” in the MtkTool main interface. Select the right baud rate according to chip model. For this unit (chip model is MT5371), select 115200×2.

LCD TV Service Manual



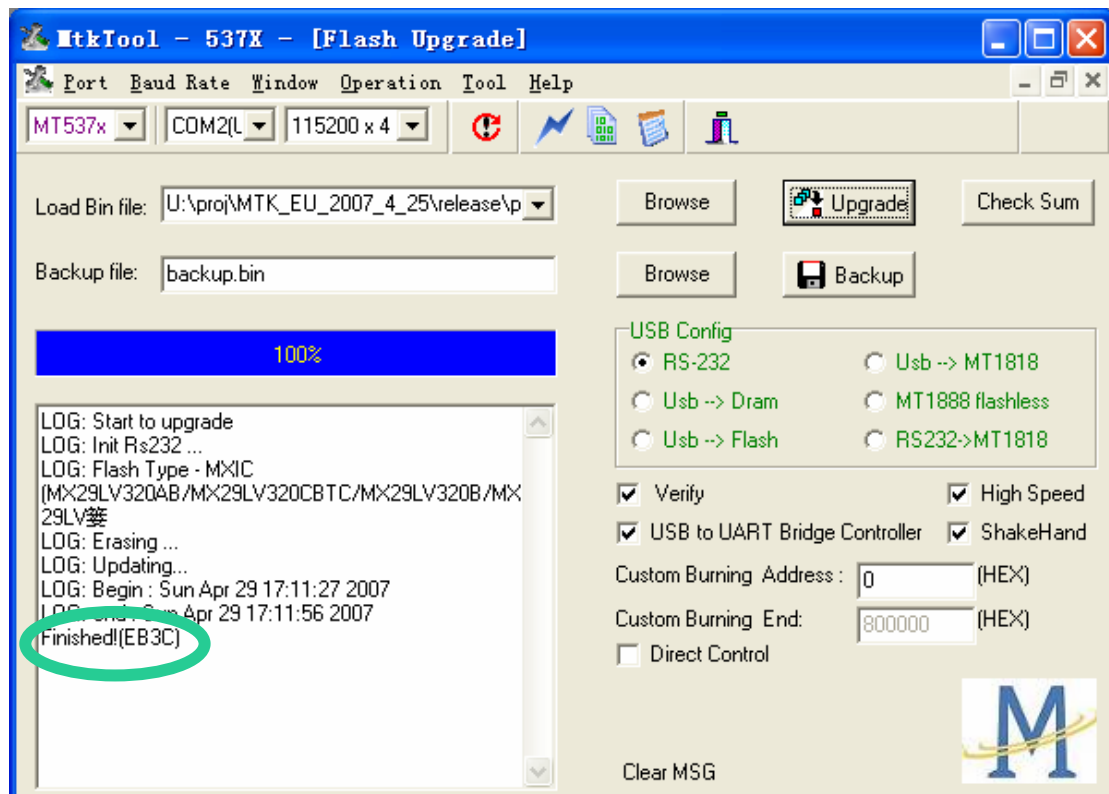
Note: Where or not click the “Auto Set Flash Baud Rate” in the “window” menu depends on

LCD TV Service Manual

the chip type. If the flash chip does not support high speed transport, do not select this option; otherwise, reserve the selected mood. For these two units here, click off “Auto Set Flash Baud Rate”.

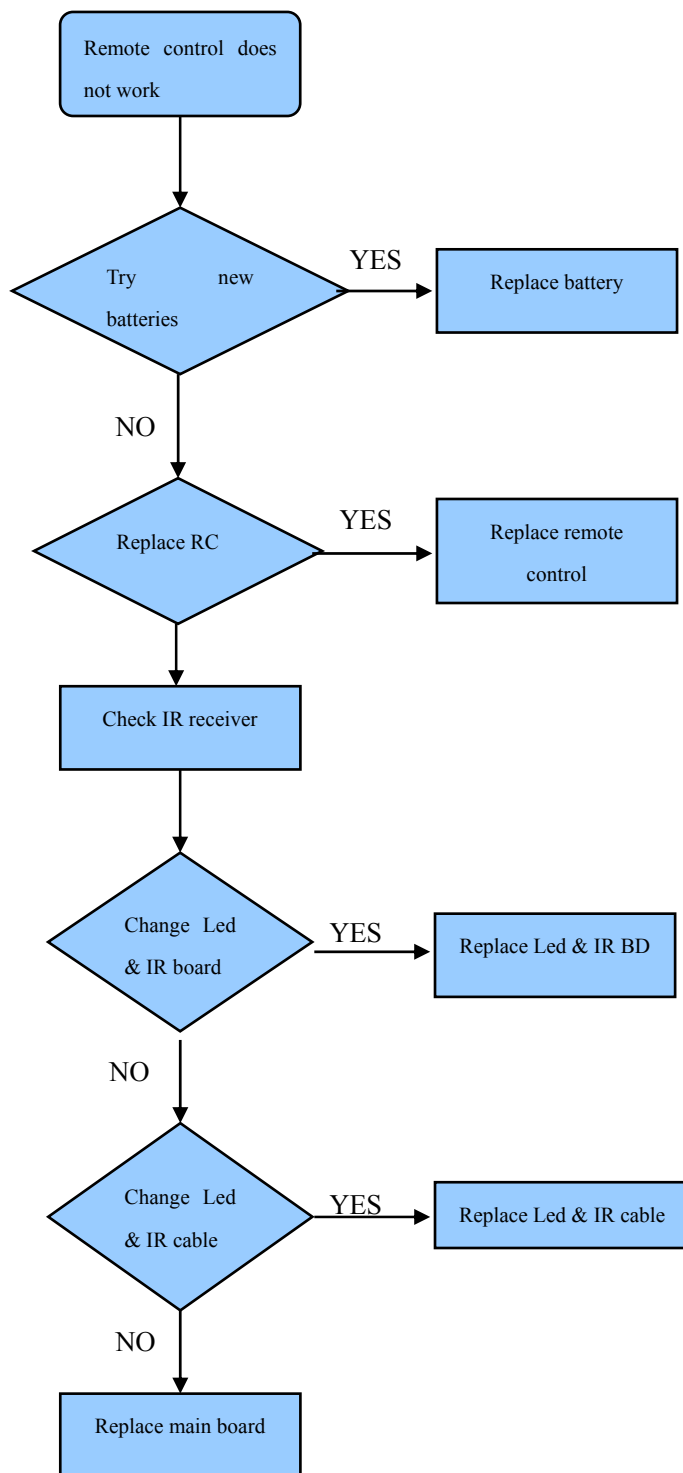
Click “Browse” button (5), find the upgrading program file, and select it. Press “Upgrade” button and start upgrading.

The following interface appears on the screen- the word “Finished” shows in the information displaying window, indicating upgrading successfully.

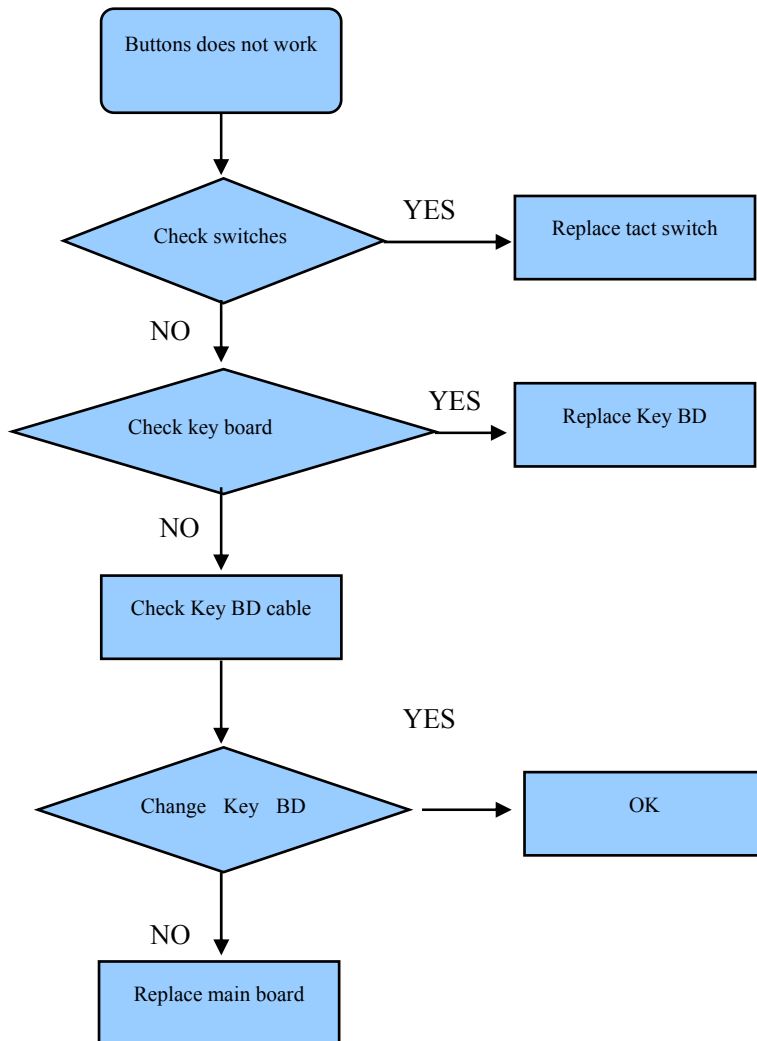


7. Troubleshooting

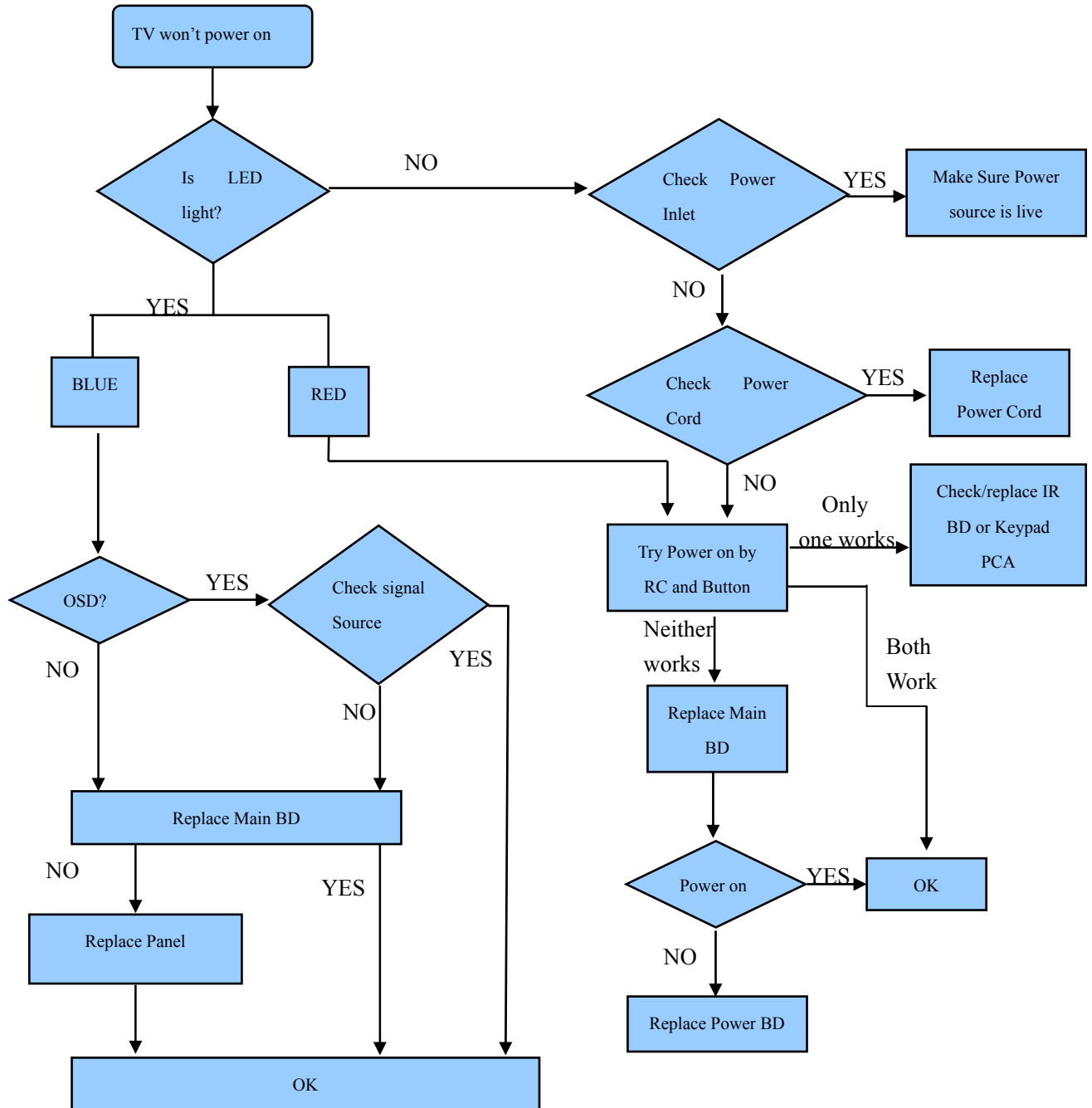
7.1 Troubleshooting for Remote Control



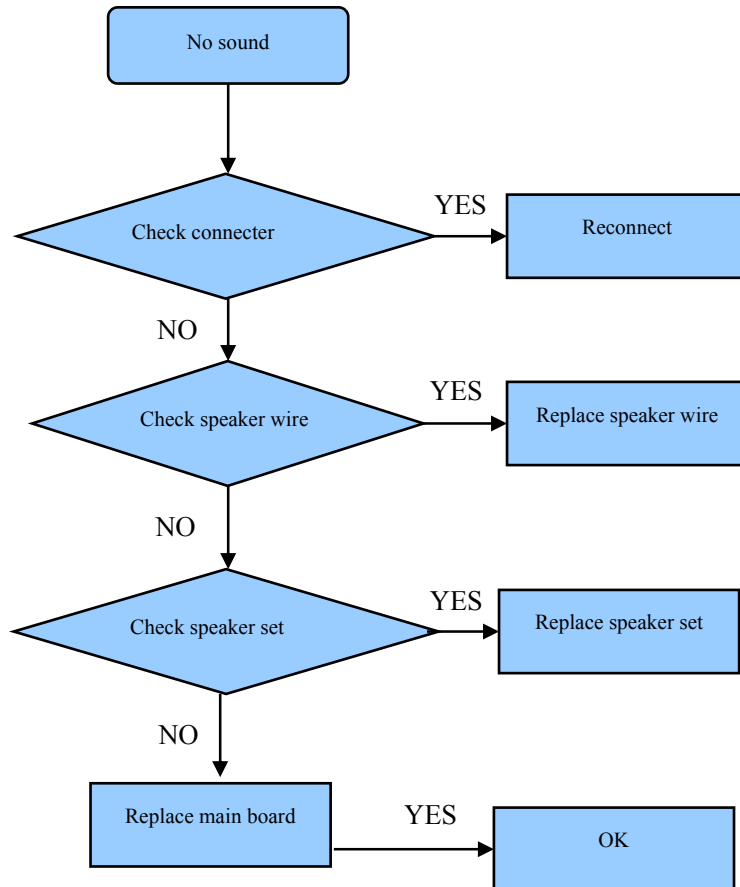
7.2 Troubleshooting for Function Key



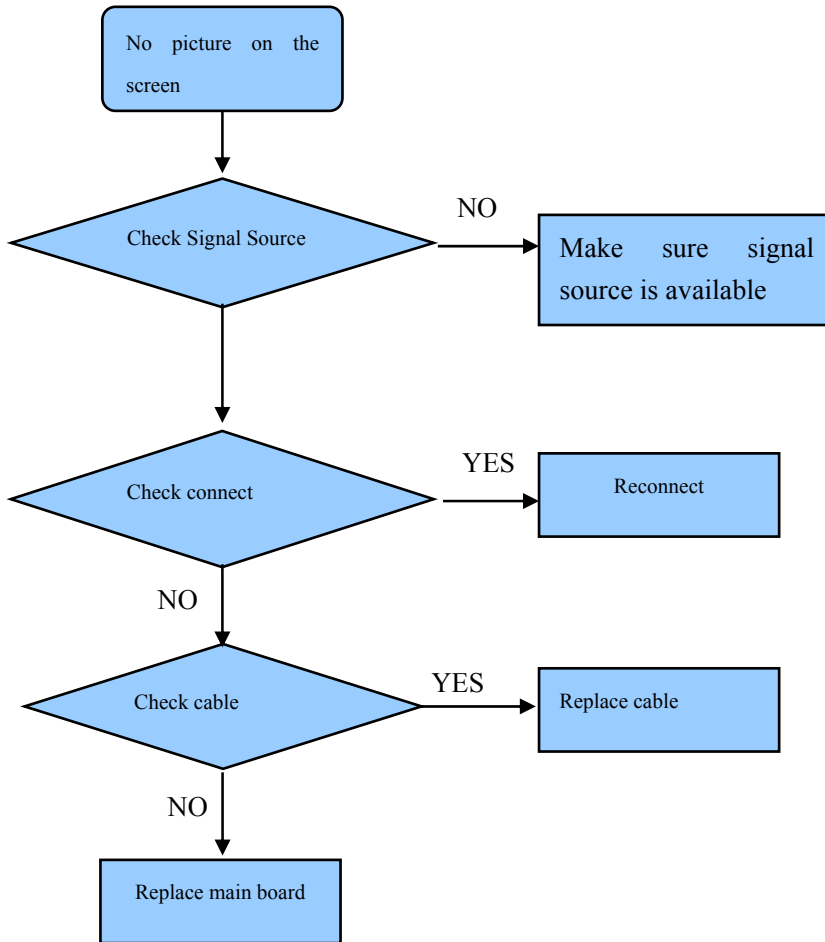
7.3 TV won't Power On



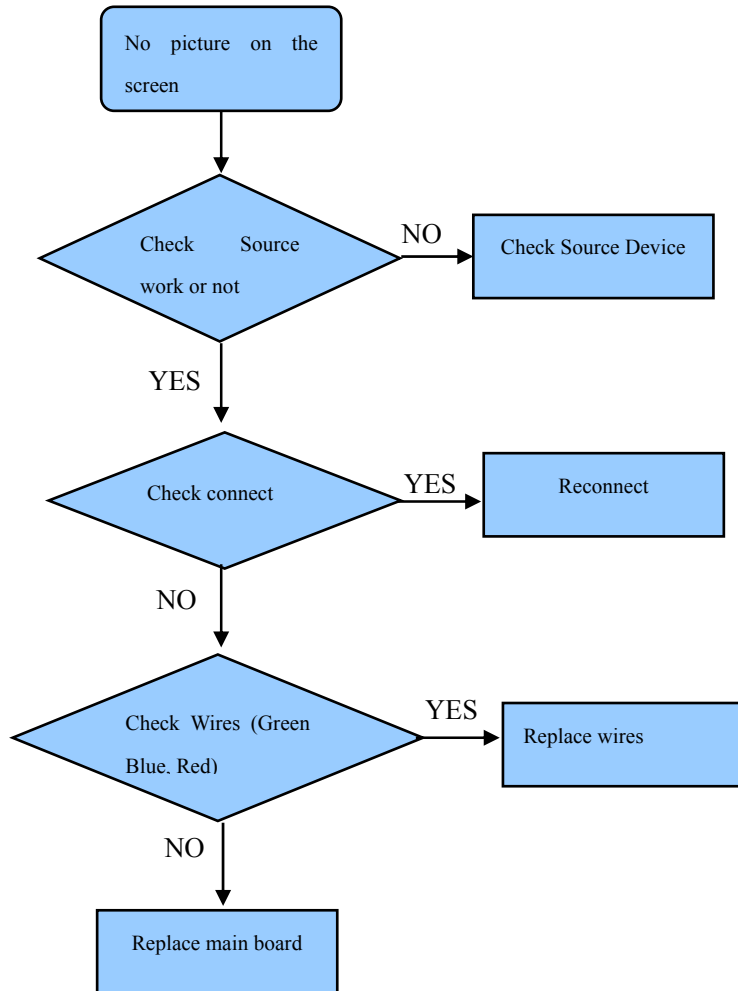
7.4 Troubleshooting for Audio



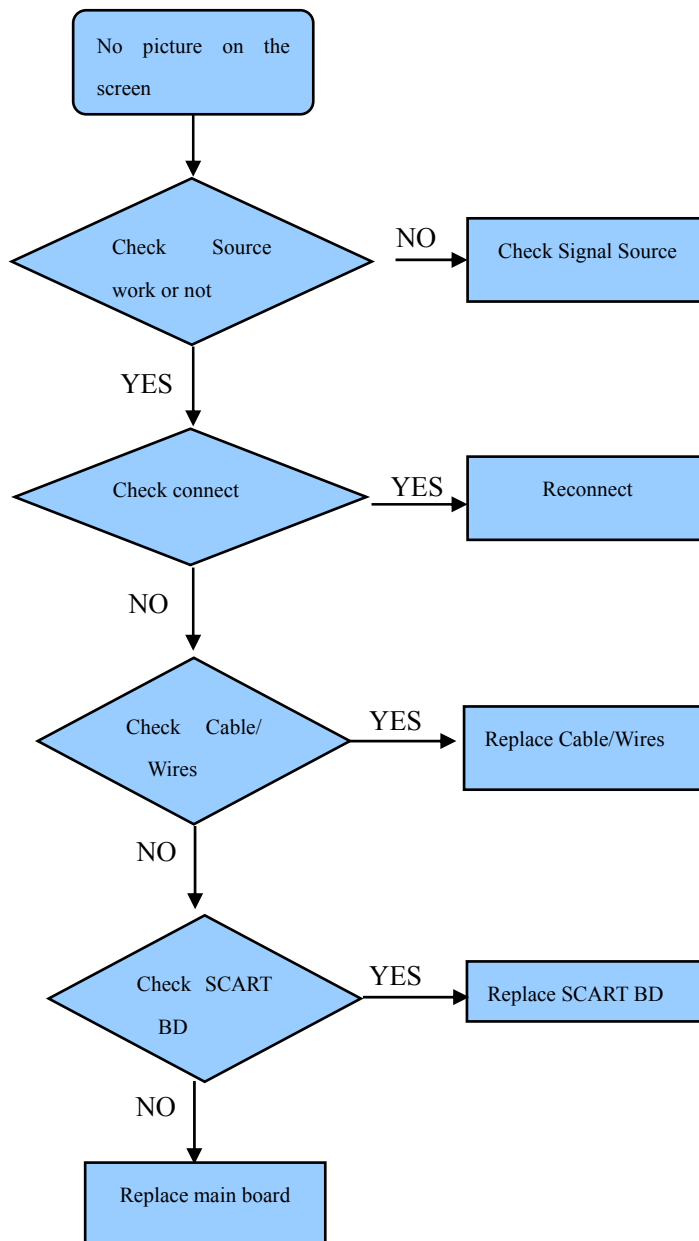
7.5 Troubleshooting for TV/VGA/HDMI input



7.6 Troubleshooting for YPbPr input



7.7 Troubleshooting for Video/S-Video/SCART input



7.8 Other problems

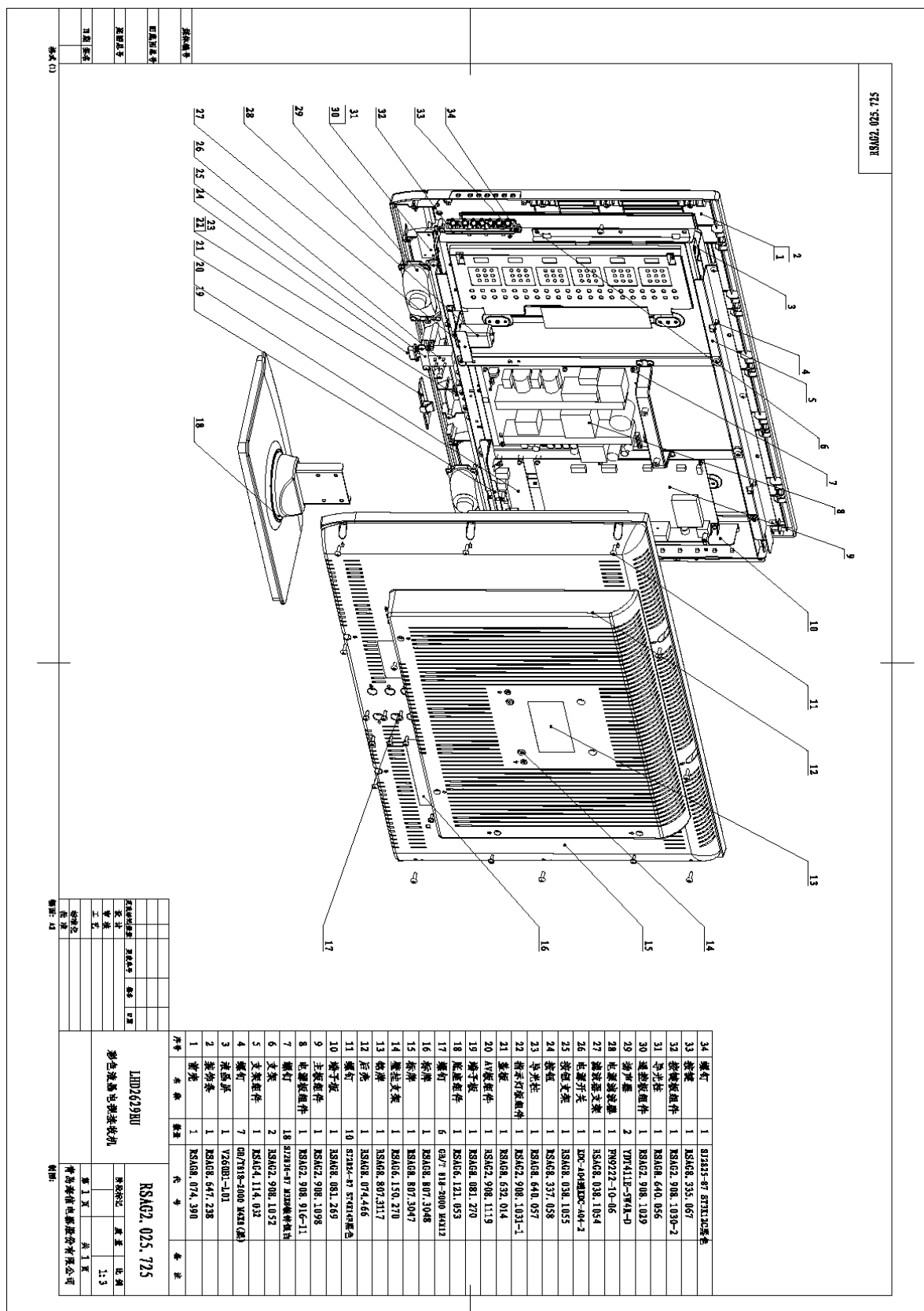
Problems:

- The image starts to disappear slowly, and turn to be white after a short period of using.
- The screen appears distortion and wobbling after the power on.
- There are lines shows on the screen after the power on.
- Lack of color and picture abnormality.
- Half picture displayed on the screen.

Please try the following:

- a. Please check if the connection between the Panel and Main Board is good, if not, please reset or change the cable.
- b. Please check if the Main board is working? If not, please change the Main Board.
- c. Please check if the panel is OK. If not, please contact the supplier.

8.ExplodeViewand



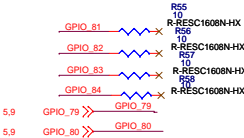
9. Schematic circuit

MT5331RAV1.6

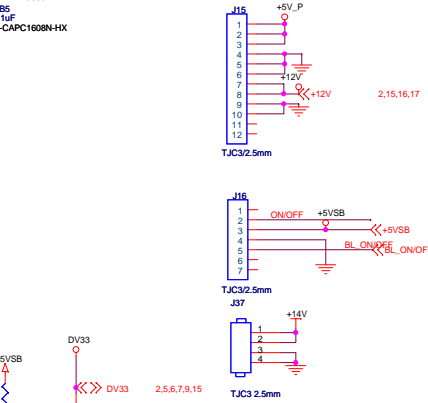
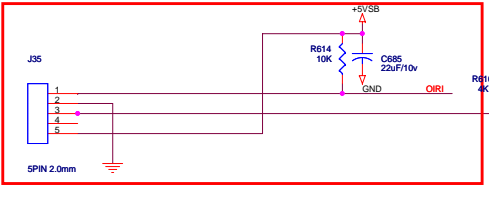
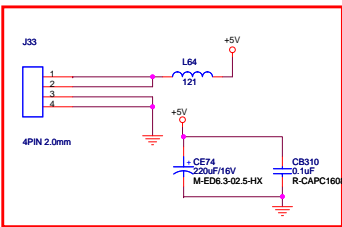
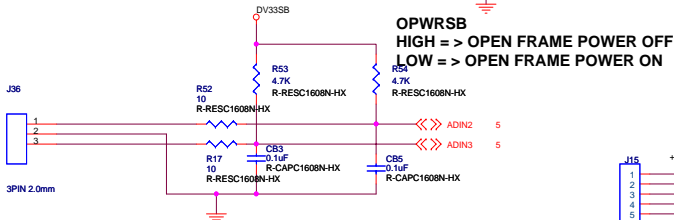
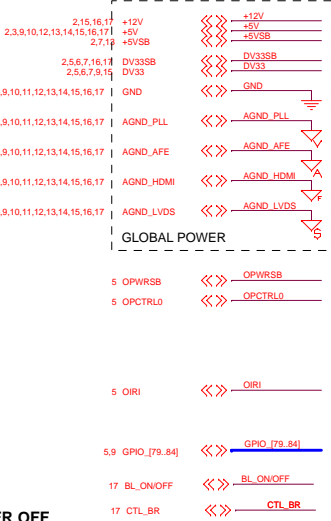
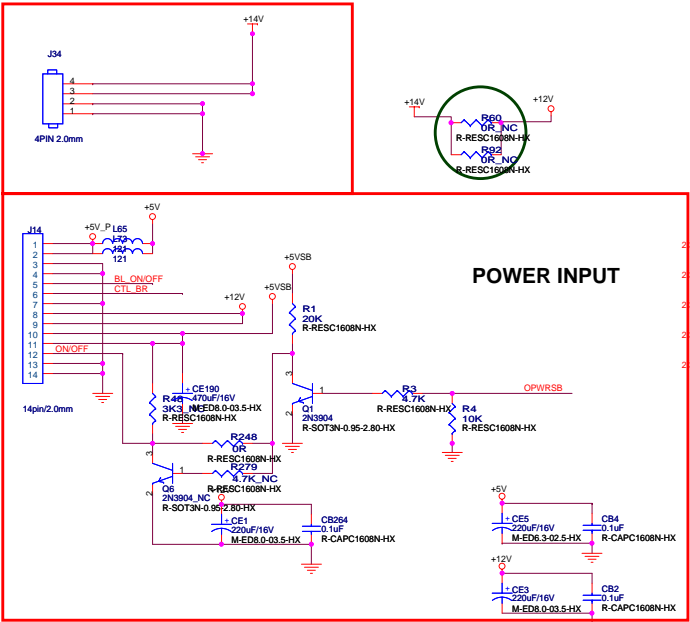
MT5331 (PBGA) REFERENCE DESIGN - 4 LAYERS

- 01. INDEX
- 02. POWER
- 03. TUNER
- 04. MT5131 ASIC
- 05. MT5331 ASIC
- 06. MT5331 BYPASS CAP.
- 07. MT5331 PERIPHERAL
- 08. DDR1 MEMORY
- 09. POD CARD
- 10. AV / SV / YPBPR INPUT
- 11. SCART1 INPUT
- 12. SCART2 INPUT
- 13. VGA INPUT
- 14. HDMI INPUT
- 15. AUDIO CODEC
- 16. AUDIO LINE OUT AND AMP
- 17. LVDS / CRT OUTPUT

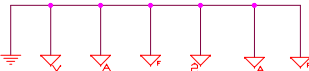
GPIO DEPEND-ON YOUR APPLICATION
WORKABLE IN STANDBY AND NORMAL MODE

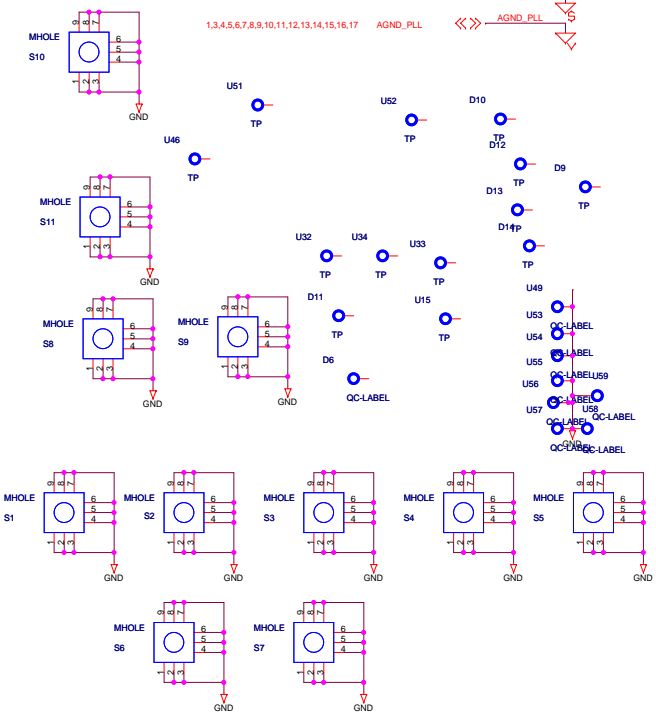
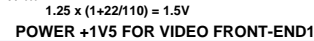
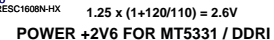
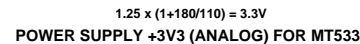
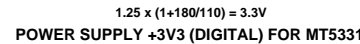
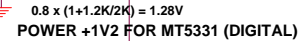
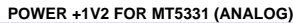
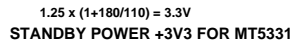
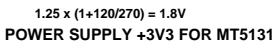
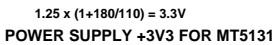
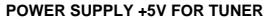


GPIO DEPEND-ON YOUR APPLICATION
WORKABLE IN NORMAL MODE ONLY

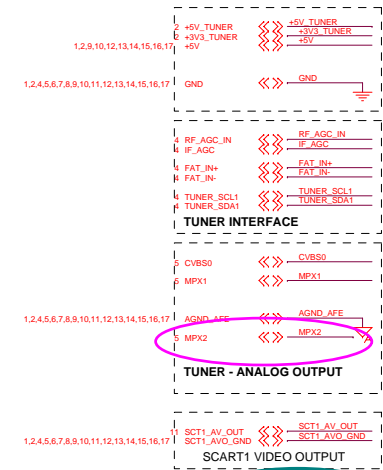
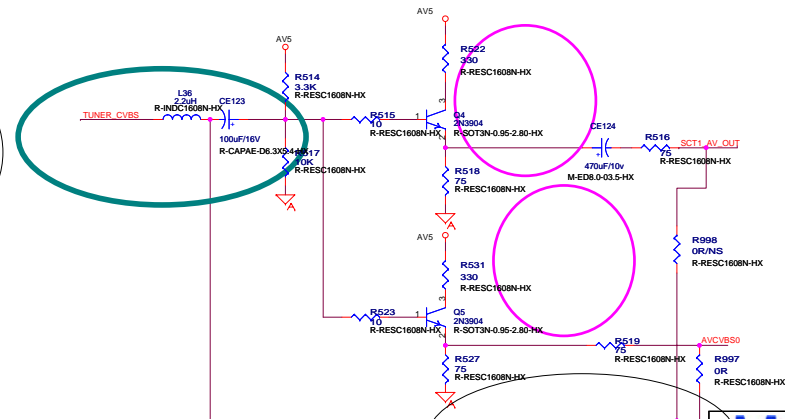
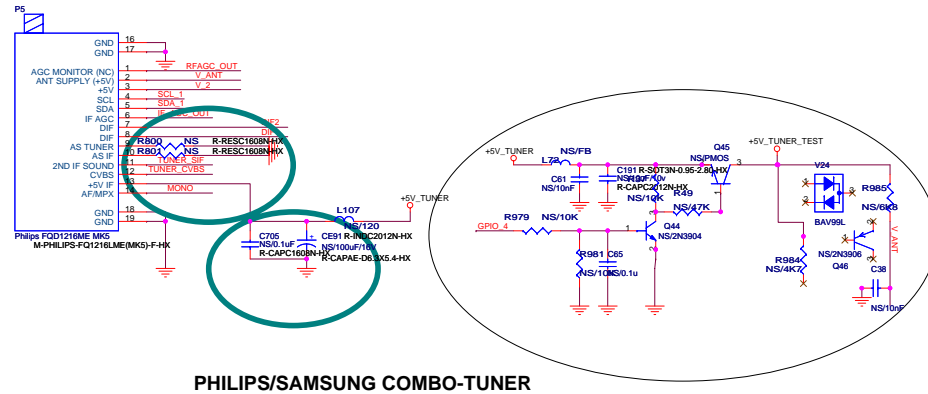
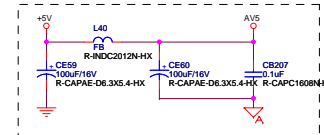
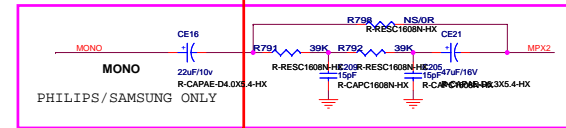
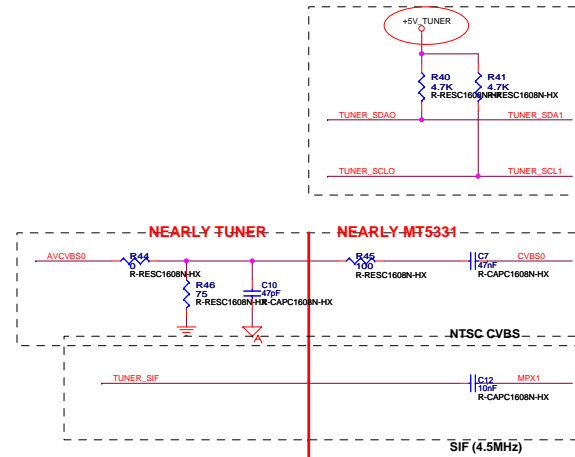


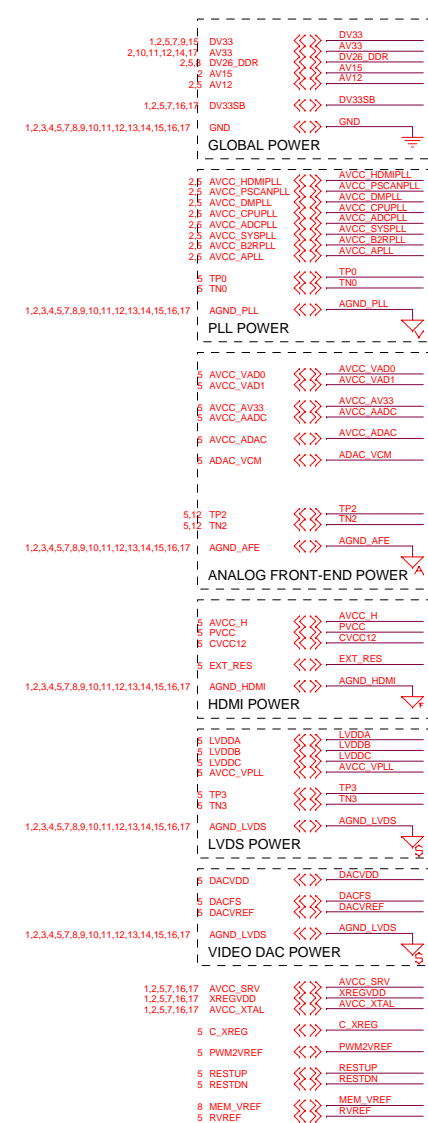
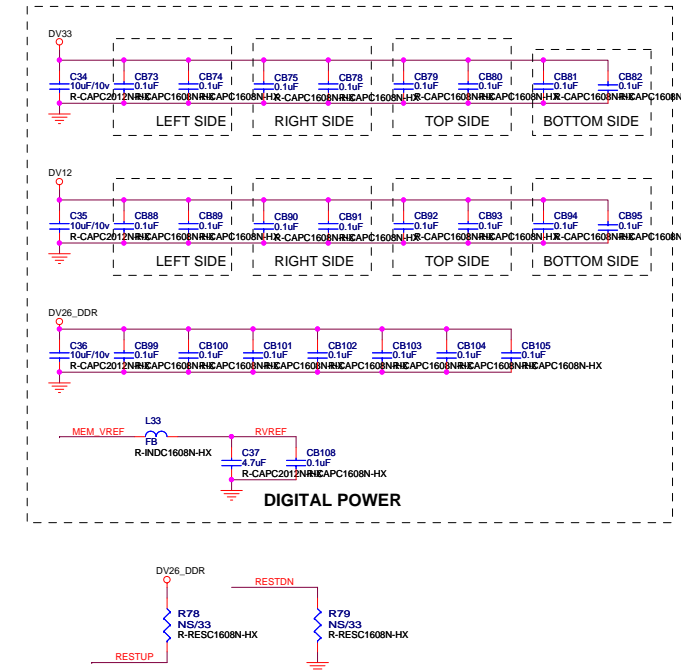
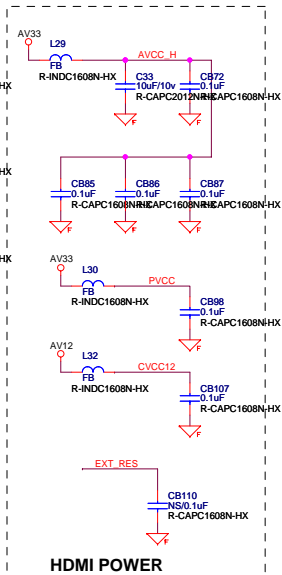
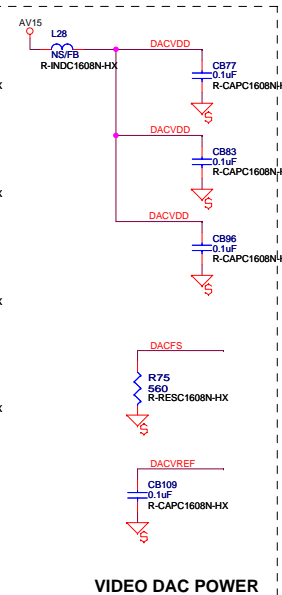
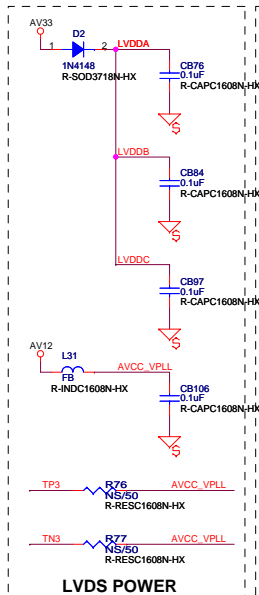
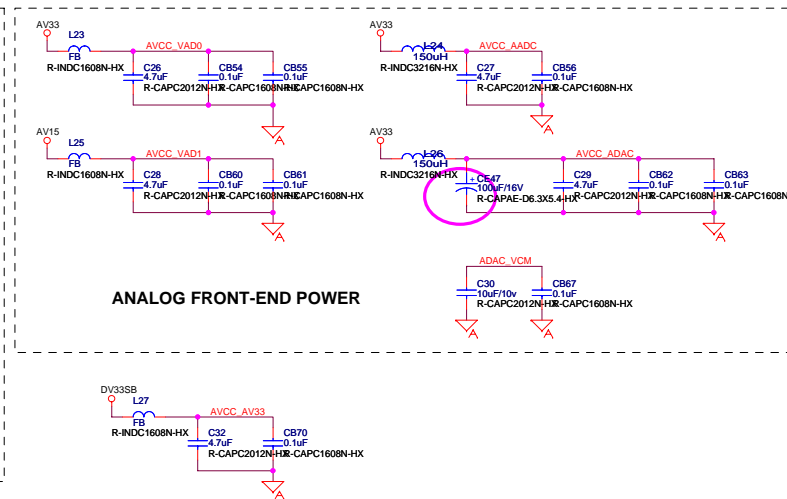
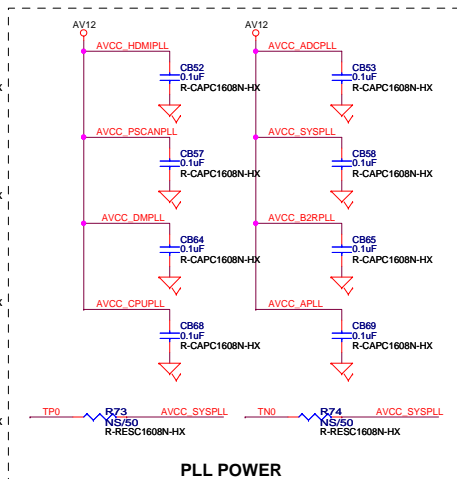
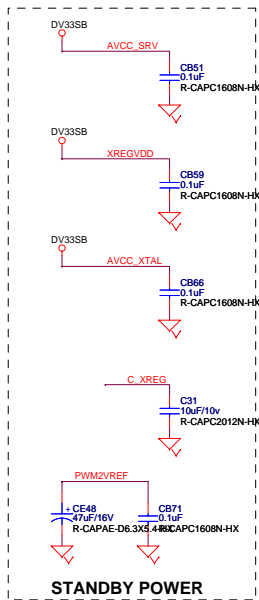
NAME	TYPE	DEVICE
+24V	POWER +24V	POWER SUPPLY
+12V	POWER +12V	POWER SUPPLY
+5V	POWER +5V	POWER SUPPLY
+5VSB	POWER +5V	POWER SUPPLY
DV33SB	POWER +3.3V	STANDBY POWER
+5V_TUENR	POWER +5V	TUNER POWER
DV33_DM	POWER +3.3V	MT5131 POWER AND ITS PERIPHERAL
DV18_DM	POWER +1.6V	MT5131 POWER
DV33	POWER +3.3V	MT5331 POWER AND ITS PERIPHERAL
AV33	POWER +3.3V	MT5331 ANALOG POWER
DV26_DDR	POWER +2.6V	MT5331 DDR POWER
AV15	POWER +1.5V	MT5331 VIDEO FRONT-END POWER
DV12	POWER +1.2V	MT5331 POWER
AV12	POWER +1.2V	MT5331 ANALOG POWER
GND	GROUND	DIGITAL GROUND
AGND_PLL	GROUND	ANALOG GROUND
AGND_AFE	GROUND	ANALOG GROUND
AGND_HDMI	GROUND	ANALOG GROUND
AGND_LVDS	GROUND	ANALOG GROUND

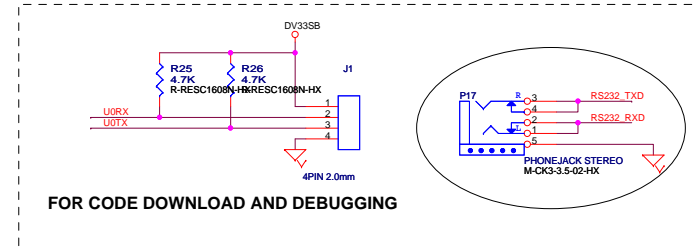
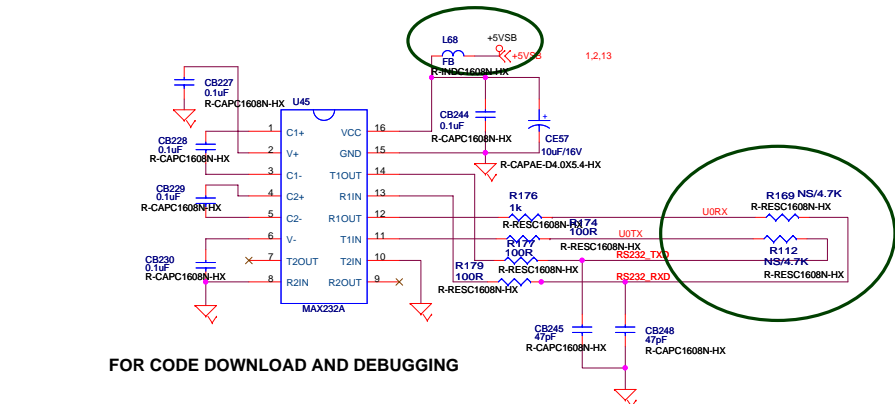
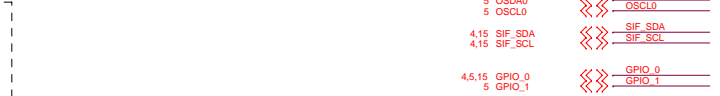
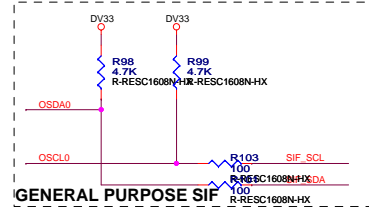
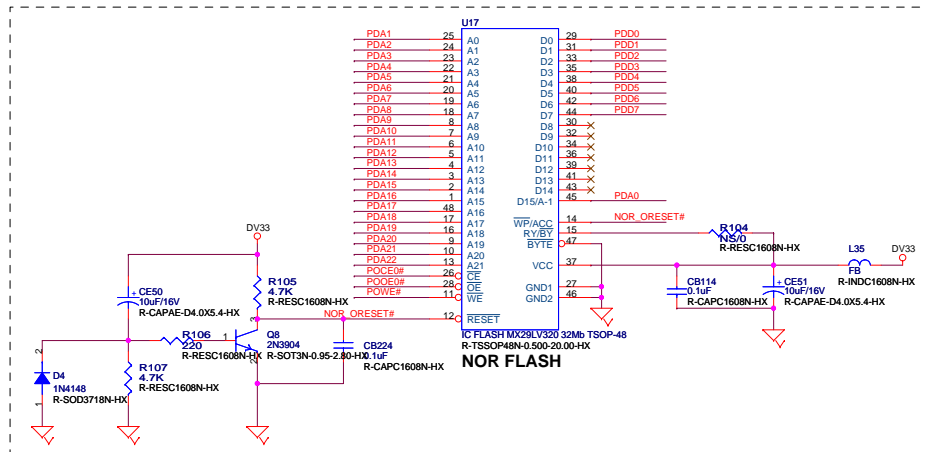
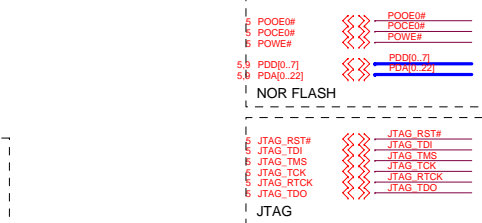
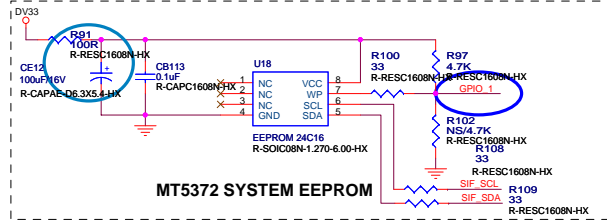
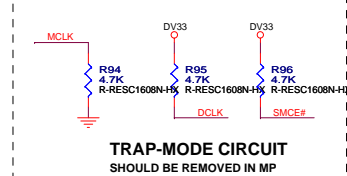
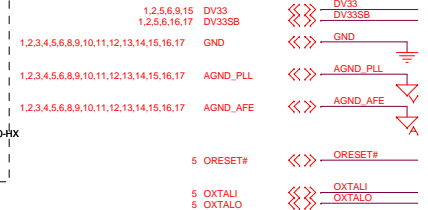
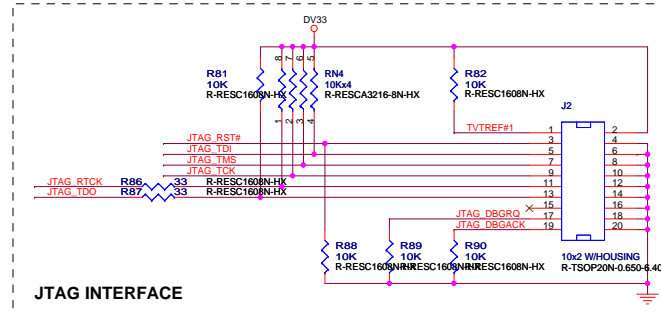
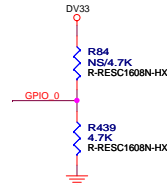
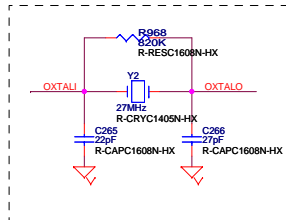
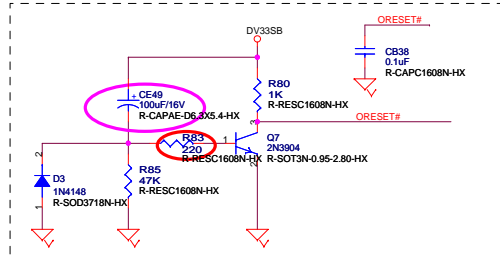




The diagram illustrates the RF front end of the Thomson 6640 receiver. It shows the connection of various components to the Thomson 6640 IC pins. The components include capacitors (C3, C4, C5, C8, C9, C11, C13), inductors (L12, L13, L14, L15, L17), and resistors (R42, R43, R47, R48, R49). The circuit is divided into several sections: a main RF input section, a +5V_TUNER section, a +3V3_TUNER section, and a +5V_TUNER section. The diagram also shows the connection of the Thomson 6640 pins to the external components, with some pins (V-ANT, V-LOG, AGC, VCC, RESET, SF, CVBS, IF, AGC, DIF) being connected to ground. The diagram is annotated with 'ROUTE SYMMETRICALLY' and 'DIF1', 'DIF2' labels.

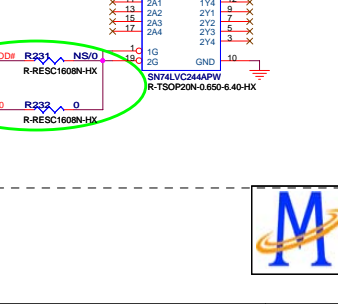
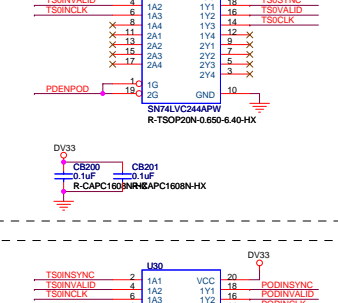
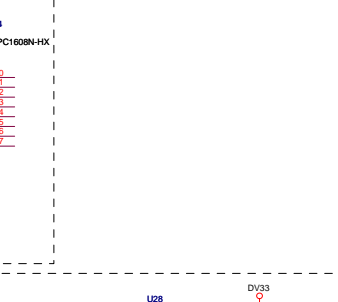
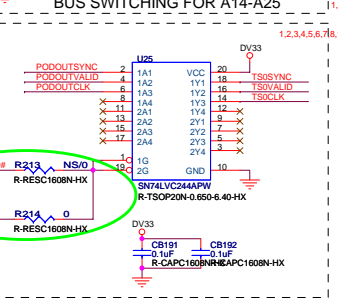
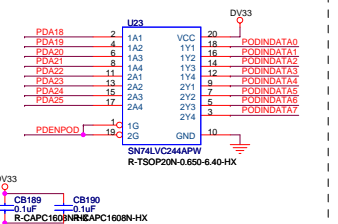
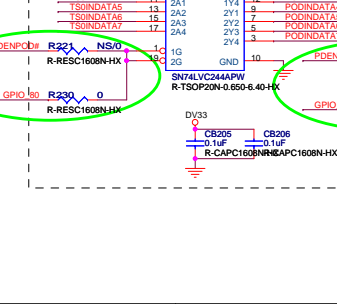
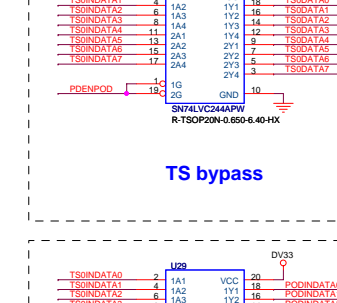
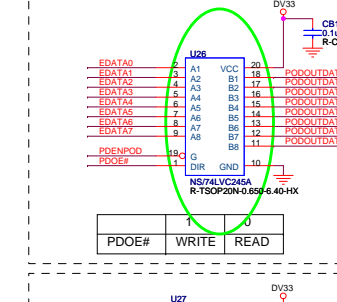
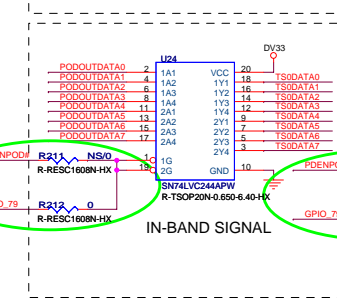
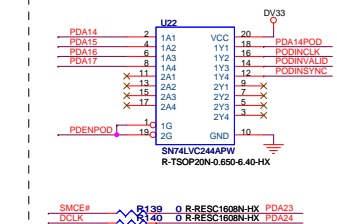
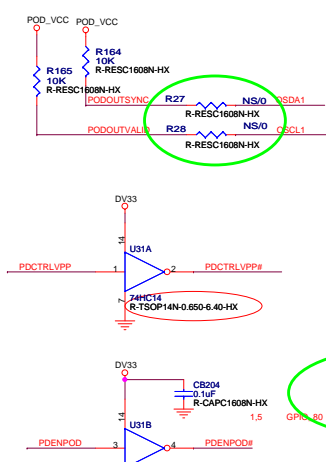
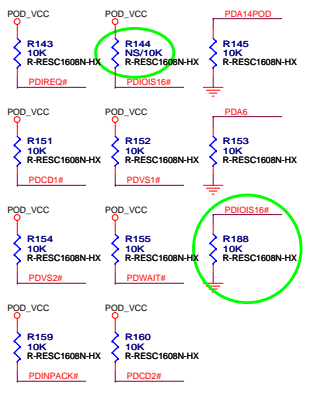
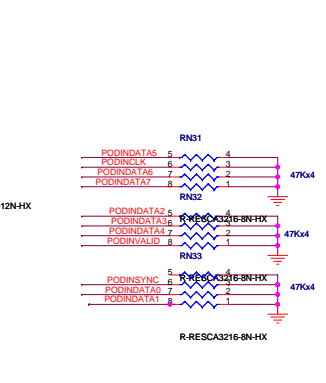
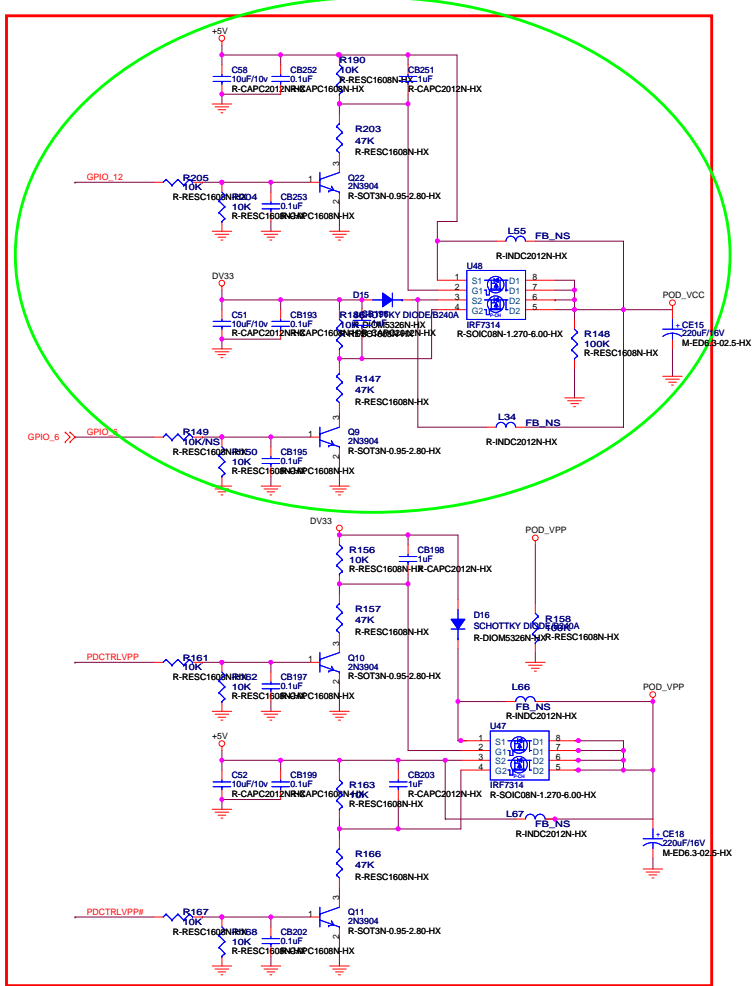
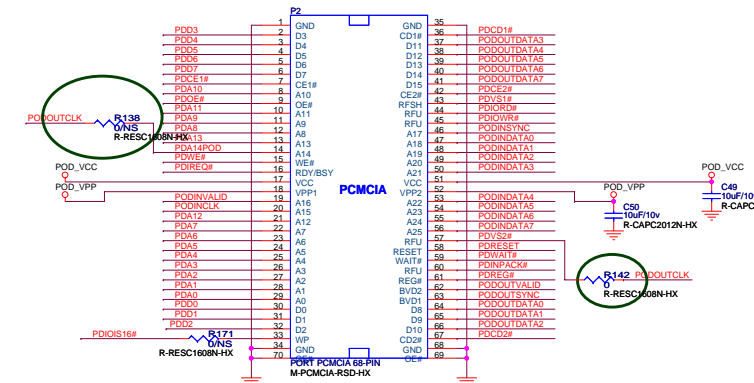






FOR CODE DOWNLOAD AND DEBUGGING

FOR CODE DOWNLOAD AND DEBUGGING



BUS SWITCHING FOR A14-A25

1,2,3,10,12,13,14,15,16,17
1,2,3,5,6,7,10,11,12,13,14,15,16,17

GLOBAL SIGNAL

5 PDCD1# PDCD1#
5 PDD0[0..7] PDD0[0..7]
5 PDCD2# PDCD2#
5 PDCD3# PDCD3#
5 PDCD4# PDCD4#
5 PDCD5# PDCD5#
5 PDCD6# PDCD6#
5 PDCD7# PDCD7#
5 PDCD8# PDCD8#
5 PDCD9# PDCD9#
5 PDCD10# PDCD10#
5 PDCD11# PDCD11#
5 PDCD12# PDCD12#
5 PDCD13# PDCD13#
5 PDCD14# PDCD14#
5 PDCD15# PDCD15#
5 PDCD16# PDCD16#
5 PDCD17# PDCD17#
5 PDCD18# PDCD18#
5 PDCD19# PDCD19#
5 PDCD20# PDCD20#
5 PDCD21# PDCD21#
5 PDCD22# PDCD22#
5 PDCD23# PDCD23#
5 PDCD24# PDCD24#
5 PDCD25# PDCD25#

PCMCIA INTERFACE

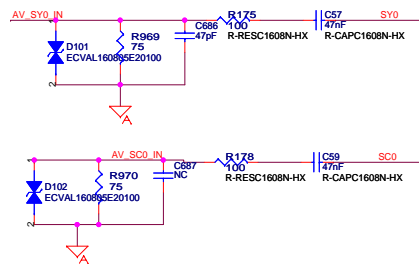
5 GPIO_12 GPIO_12
1,5 GPIO_79 GPIO_79

TS INPUT FROM MT5131

5 TSINDATA[0..7] TSINDATA[0..7]
5 TSINDATA[8..15] TSINDATA[8..15]
5 TSINDATA[16..23] TSINDATA[16..23]
5 TSINDATA[24..31] TSINDATA[24..31]
5 TSINDATA[32..39] TSINDATA[32..39]
5 TSINDATA[40..47] TSINDATA[40..47]
5 TSINDATA[48..55] TSINDATA[48..55]
5 TSINDATA[56..63] TSINDATA[56..63]
5 TSINDATA[64..71] TSINDATA[64..71]
5 TSINDATA[72..79] TSINDATA[72..79]
5 TSINDATA[80..87] TSINDATA[80..87]
5 TSINDATA[88..95] TSINDATA[88..95]
5 TSINDATA[96..103] TSINDATA[96..103]
5 TSINDATA[104..111] TSINDATA[104..111]
5 TSINDATA[112..119] TSINDATA[112..119]
5 TSINDATA[120..127] TSINDATA[120..127]
5 TSINDATA[128..135] TSINDATA[128..135]
5 TSINDATA[136..143] TSINDATA[136..143]
5 TSINDATA[144..151] TSINDATA[144..151]
5 TSINDATA[152..159] TSINDATA[152..159]
5 TSINDATA[160..167] TSINDATA[160..167]
5 TSINDATA[168..175] TSINDATA[168..175]
5 TSINDATA[176..183] TSINDATA[176..183]
5 TSINDATA[184..191] TSINDATA[184..191]
5 TSINDATA[192..199] TSINDATA[192..199]
5 TSINDATA[200..207] TSINDATA[200..207]
5 TSINDATA[208..215] TSINDATA[208..215]
5 TSINDATA[216..223] TSINDATA[216..223]
5 TSINDATA[224..231] TSINDATA[224..231]
5 TSINDATA[232..239] TSINDATA[232..239]
5 TSINDATA[240..247] TSINDATA[240..247]
5 TSINDATA[248..255] TSINDATA[248..255]
5 TSINDATA[256..263] TSINDATA[256..263]
5 TSINDATA[264..271] TSINDATA[264..271]
5 TSINDATA[272..279] TSINDATA[272..279]
5 TSINDATA[280..287] TSINDATA[280..287]
5 TSINDATA[288..295] TSINDATA[288..295]
5 TSINDATA[296..303] TSINDATA[296..303]
5 TSINDATA[304..311] TSINDATA[304..311]
5 TSINDATA[312..319] TSINDATA[312..319]
5 TSINDATA[320..327] TSINDATA[320..327]
5 TSINDATA[328..335] TSINDATA[328..335]
5 TSINDATA[336..343] TSINDATA[336..343]
5 TSINDATA[344..351] TSINDATA[344..351]
5 TSINDATA[352..359] TSINDATA[352..359]
5 TSINDATA[360..367] TSINDATA[360..367]
5 TSINDATA[368..375] TSINDATA[368..375]
5 TSINDATA[376..383] TSINDATA[376..383]
5 TSINDATA[384..391] TSINDATA[384..391]
5 TSINDATA[392..399] TSINDATA[392..399]
5 TSINDATA[400..407] TSINDATA[400..407]
5 TSINDATA[408..415] TSINDATA[408..415]
5 TSINDATA[416..423] TSINDATA[416..423]
5 TSINDATA[424..431] TSINDATA[424..431]
5 TSINDATA[432..439] TSINDATA[432..439]
5 TSINDATA[440..447] TSINDATA[440..447]
5 TSINDATA[448..455] TSINDATA[448..455]
5 TSINDATA[456..463] TSINDATA[456..463]
5 TSINDATA[464..471] TSINDATA[464..471]
5 TSINDATA[472..479] TSINDATA[472..479]
5 TSINDATA[480..487] TSINDATA[480..487]
5 TSINDATA[488..495] TSINDATA[488..495]
5 TSINDATA[496..503] TSINDATA[496..503]
5 TSINDATA[504..511] TSINDATA[504..511]
5 TSINDATA[512..519] TSINDATA[512..519]
5 TSINDATA[520..527] TSINDATA[520..527]
5 TSINDATA[528..535] TSINDATA[528..535]
5 TSINDATA[536..543] TSINDATA[536..543]
5 TSINDATA[544..551] TSINDATA[544..551]
5 TSINDATA[552..559] TSINDATA[552..559]
5 TSINDATA[560..567] TSINDATA[560..567]
5 TSINDATA[568..575] TSINDATA[568..575]
5 TSINDATA[576..583] TSINDATA[576..583]
5 TSINDATA[584..591] TSINDATA[584..591]
5 TSINDATA[592..599] TSINDATA[592..599]
5 TSINDATA[600..607] TSINDATA[600..607]
5 TSINDATA[608..615] TSINDATA[608..615]
5 TSINDATA[616..623] TSINDATA[616..623]
5 TSINDATA[624..631] TSINDATA[624..631]
5 TSINDATA[632..639] TSINDATA[632..639]
5 TSINDATA[640..647] TSINDATA[640..647]
5 TSINDATA[648..655] TSINDATA[648..655]
5 TSINDATA[656..663] TSINDATA[656..663]
5 TSINDATA[664..671] TSINDATA[664..671]
5 TSINDATA[672..679] TSINDATA[672..679]
5 TSINDATA[680..687] TSINDATA[680..687]
5 TSINDATA[688..695] TSINDATA[688..695]
5 TSINDATA[696..703] TSINDATA[696..703]
5 TSINDATA[704..711] TSINDATA[704..711]
5 TSINDATA[712..719] TSINDATA[712..719]
5 TSINDATA[720..727] TSINDATA[720..727]
5 TSINDATA[728..735] TSINDATA[728..735]
5 TSINDATA[736..743] TSINDATA[736..743]
5 TSINDATA[744..751] TSINDATA[744..751]
5 TSINDATA[752..759] TSINDATA[752..759]
5 TSINDATA[760..767] TSINDATA[760..767]
5 TSINDATA[768..775] TSINDATA[768..775]
5 TSINDATA[776..783] TSINDATA[776..783]
5 TSINDATA[784..791] TSINDATA[784..791]
5 TSINDATA[792..799] TSINDATA[792..799]
5 TSINDATA[800..807] TSINDATA[800..807]
5 TSINDATA[808..815] TSINDATA[808..815]
5 TSINDATA[816..823] TSINDATA[816..823]
5 TSINDATA[824..831] TSINDATA[824..831]
5 TSINDATA[832..839] TSINDATA[832..839]
5 TSINDATA[840..847] TSINDATA[840..847]
5 TSINDATA[848..855] TSINDATA[848..855]
5 TSINDATA[856..863] TSINDATA[856..863]
5 TSINDATA[864..871] TSINDATA[864..871]
5 TSINDATA[872..879] TSINDATA[872..879]
5 TSINDATA[880..887] TSINDATA[880..887]
5 TSINDATA[888..895] TSINDATA[888..895]
5 TSINDATA[896..903] TSINDATA[896..903]
5 TSINDATA[904..911] TSINDATA[904..911]
5 TSINDATA[912..919] TSINDATA[912..919]
5 TSINDATA[920..927] TSINDATA[920..927]
5 TSINDATA[928..935] TSINDATA[928..935]
5 TSINDATA[936..943] TSINDATA[936..943]
5 TSINDATA[944..951] TSINDATA[944..951]
5 TSINDATA[952..959] TSINDATA[952..959]
5 TSIND

S_Video input

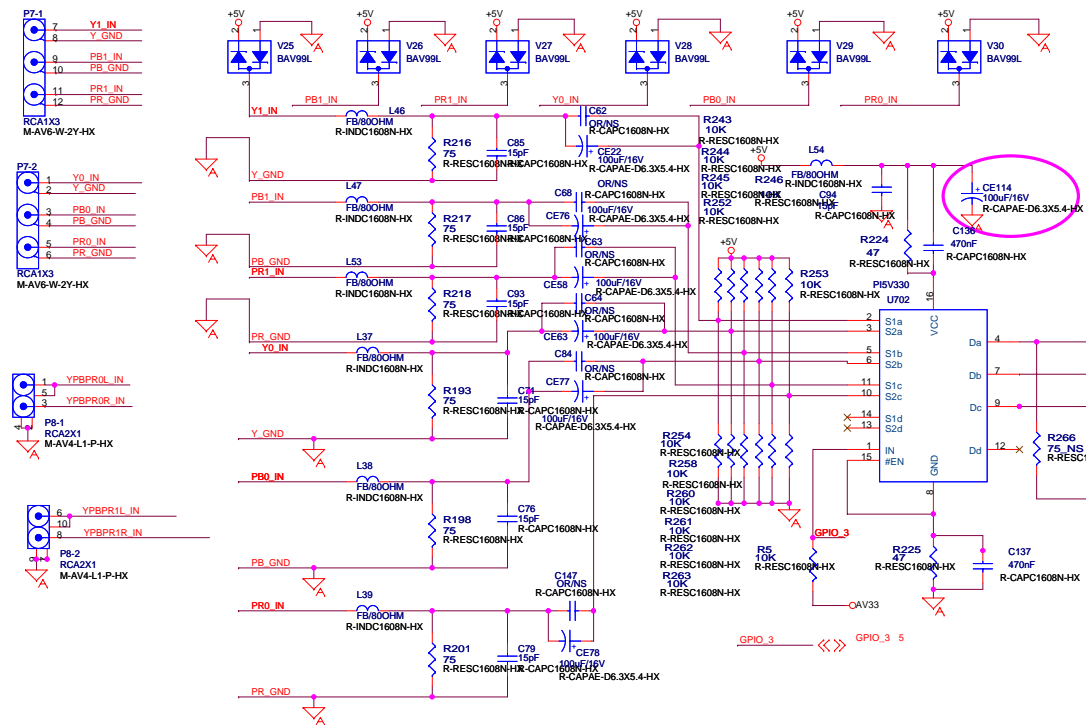
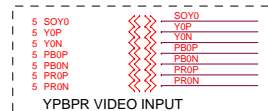
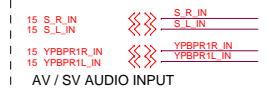
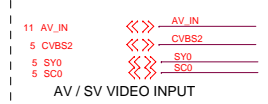
NEARLY MT5331



AV input

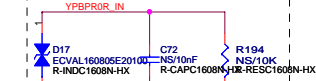
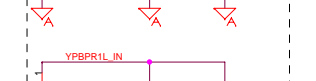
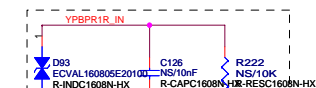
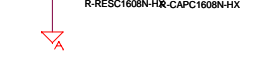
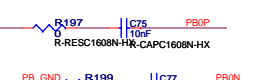
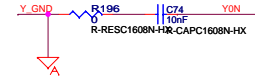
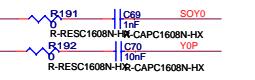
NEARLY AV CONNECTOR

NEARLY MT5331



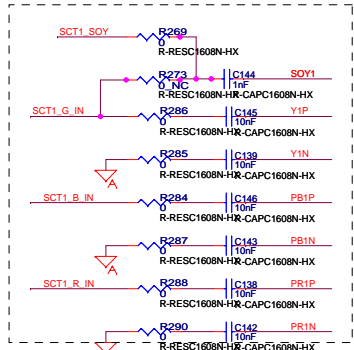
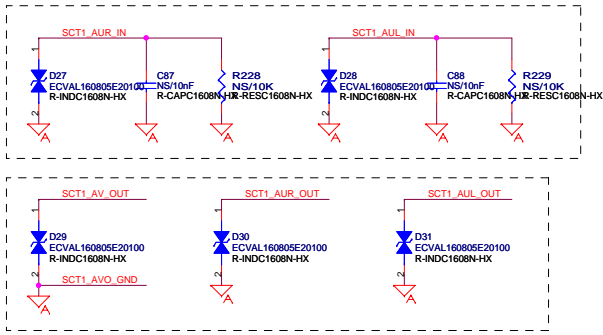
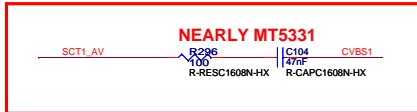
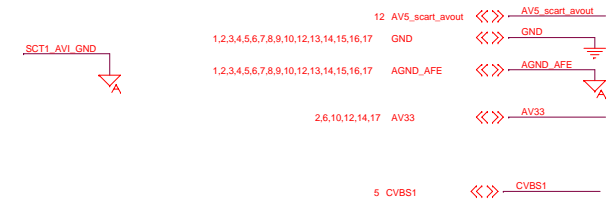
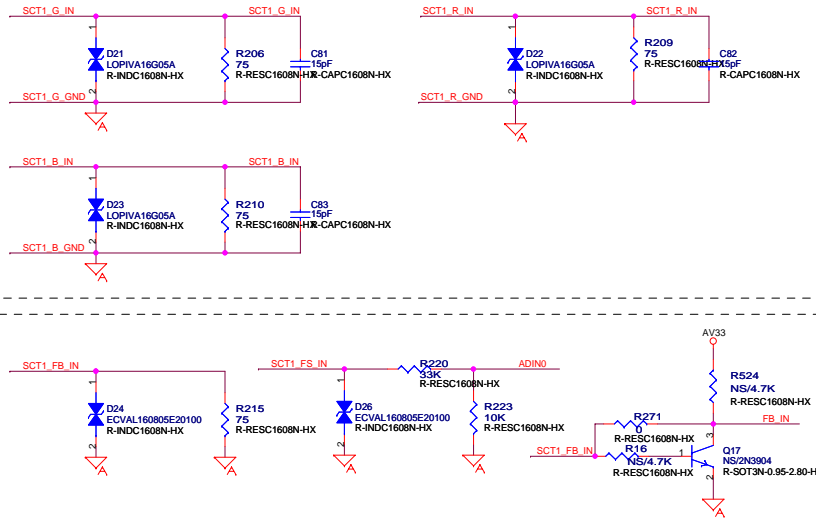
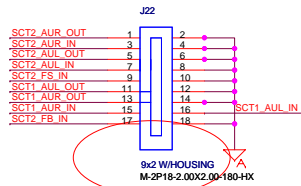
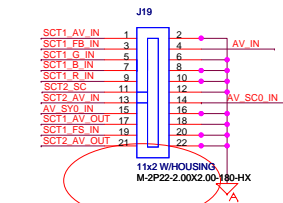
NEARLY YPBPR CONNECTOR

NEARLY MT5331

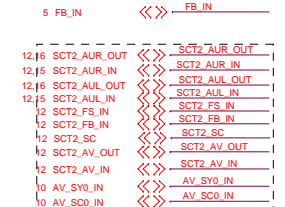
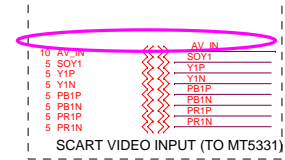
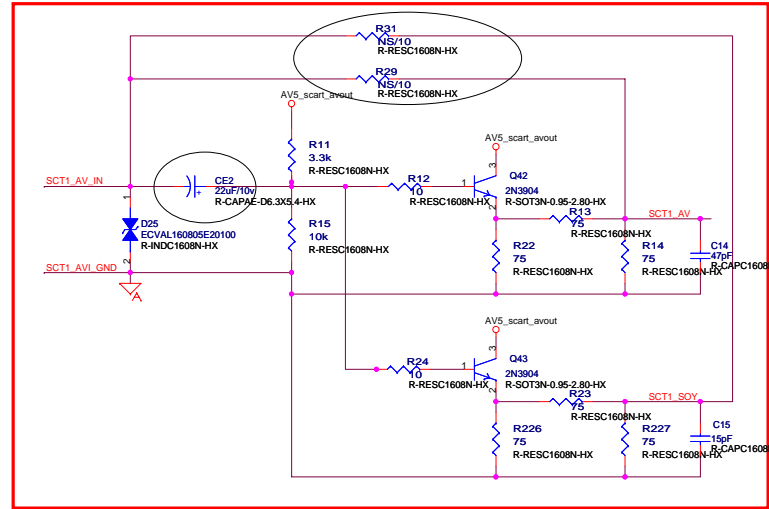


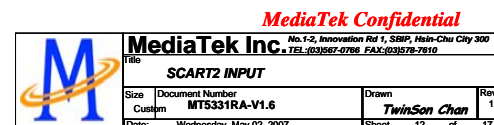
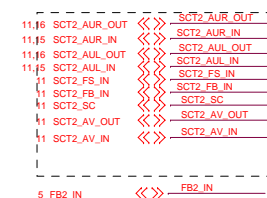
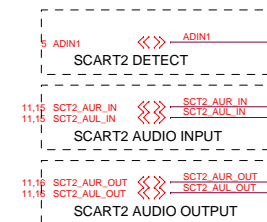
NEAR TO THE CONNECTOR

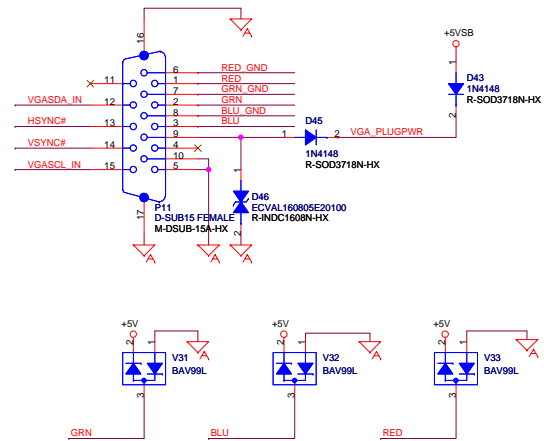
MediaTek Confidential



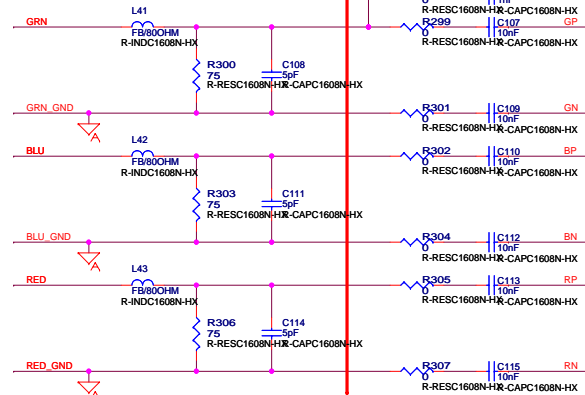
NEARLY MT5331



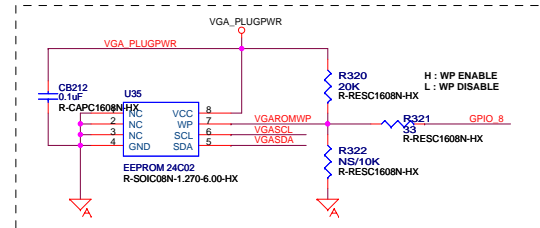
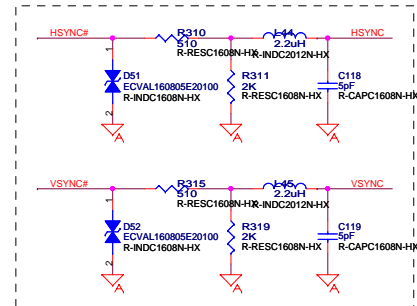
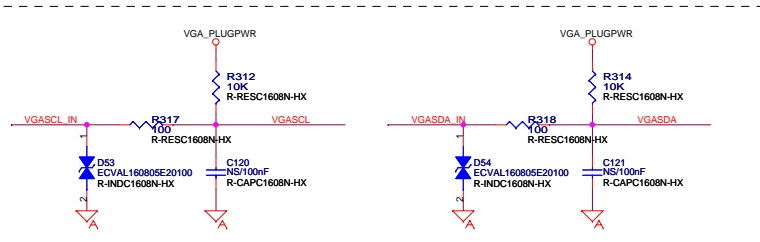
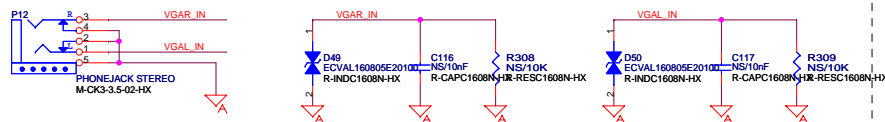
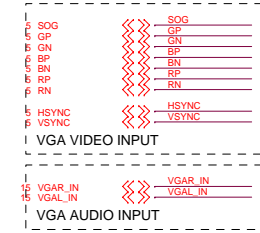




NEARLY VGA CONNECTOR



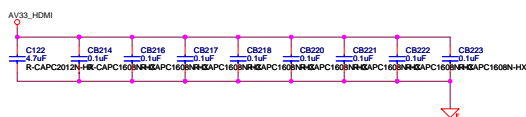
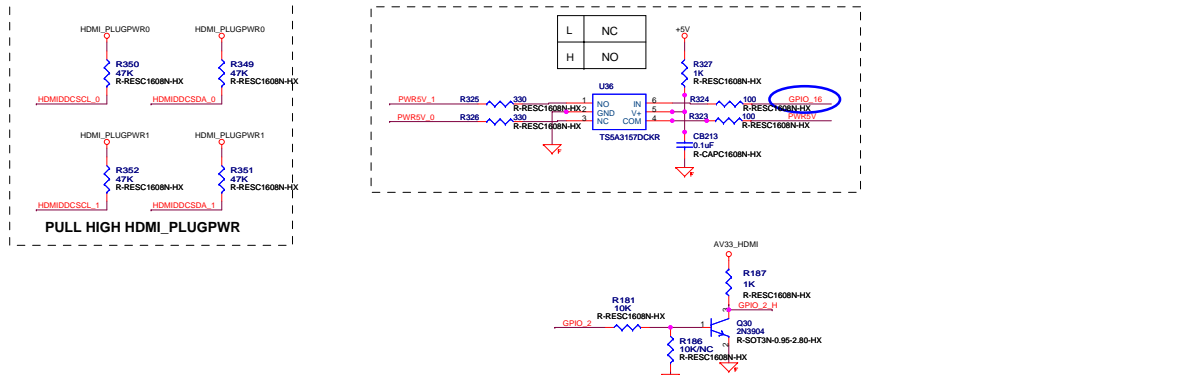
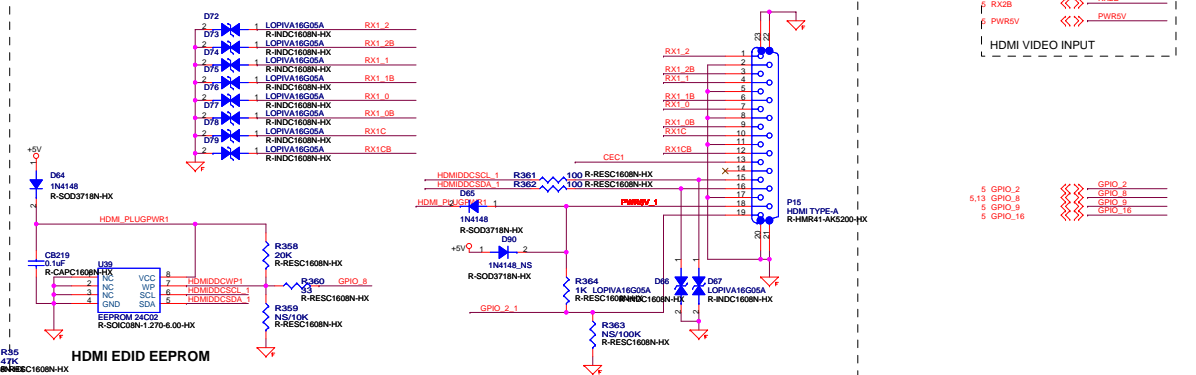
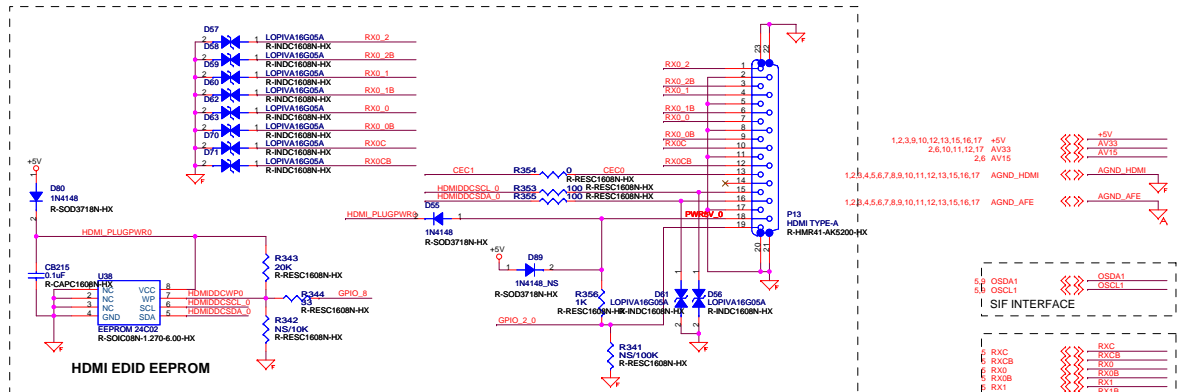
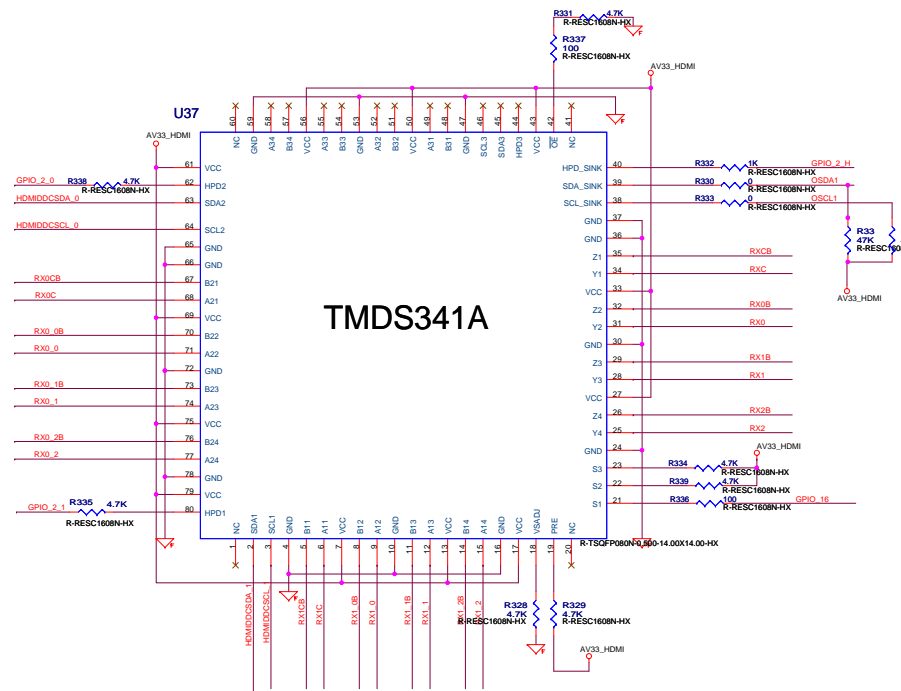
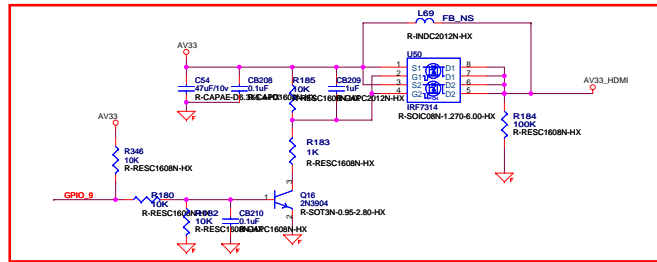
NEARLY MT5331

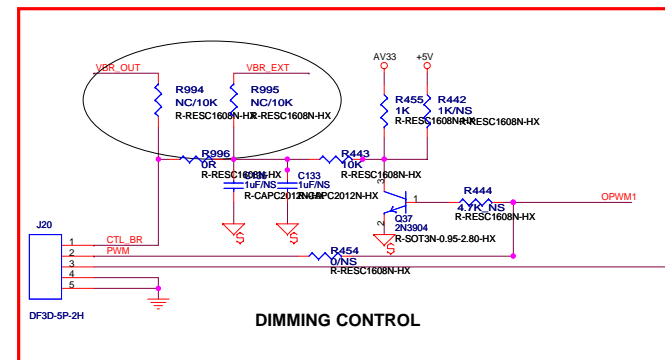
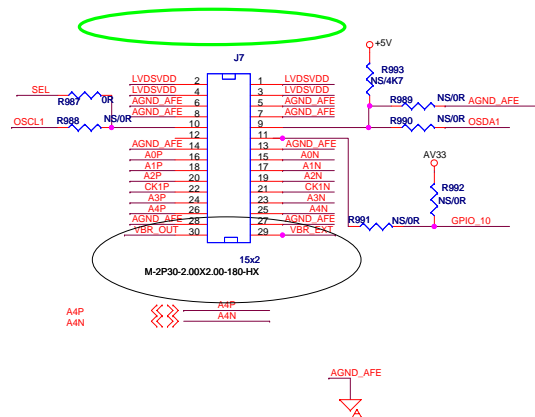
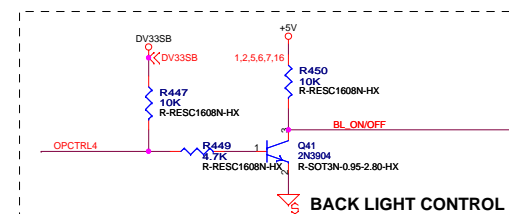
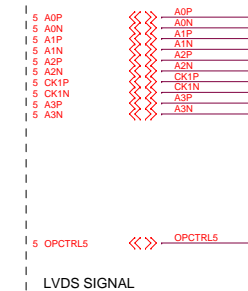
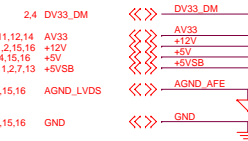
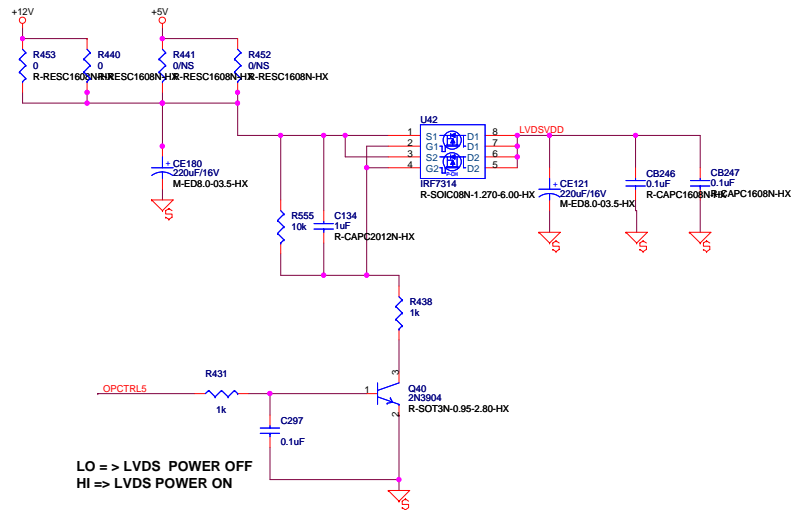


MediaTek Confidential

	MediaTek Inc. No. 1-2, Innovation Rd 1, SBIP, Hsin-Chu City 300 TEL: (03) 567-0785 FAX: (03) 578-7810		VGA INPUT	
	Size: Custom Date: Wednesday, May 02, 2007	Document Number: MT5331RA-V1.6 Drawn: TwinSen Chan Sheet: 13 of 17	Rev: 1	

CONTROL PINS			I/O SELECTED		HOT PLUG DETECT STATUS		
S1	S2	S3	Y/Z	SCL_SINK SDA_SINK	HPD1	HPD2	HPD3
H	H	H	A1/B1	SCL1 SDA1	HPD_SINK	L	L
L	H	H	A2/B2	SCL2 SDA2	L	HPD_SINK	L





MediaTek Confidential

	MediaTek Inc. No.1-2, Innovation Rd 1, S38P, Hsin-Chu City 300 TEL: (886) 3507-0799 FAX: (886) 3507-7910	
	LVDS OUTPUT	
Size	Document Number	Drawn
Customer	MT5331RA-V1.6	TwinSen Chan
Date	Wednesday, May 02, 2007	Sheet 17 of 17